ATS400

ETL DataView 3

User Manual

PRÜFTECHNIK

Contents

1 Introduction

This manual describes the functions of **ETL DataView 3**.

This manual is aimed at various roles, which use **ETL DataView 3**. This manual differentiates between the roles of administration, test plan editing, inspector and report creation. Furthermore, the manual contains a reference about the tests, for the files used and created by **ETL DataView 3**.

Note

This manual has the status in progress. All details are correct to the best of knowledge, but may be incomplete. The information in this manual supplements and replaces the existing documentation.

All text in `Courier New blue` is either text as shown in the user interface or keywords in files.

Note

This manual is aimed to be used with an ATS400. When using devices of Series 36 not all chapters are applicapable. There will be no note on this fact.

2 Administration

This part of the manual is aimed at system administrators.

It describes information that is necessary to set up and operate **ETL DataView 3**.

It describes activities that a system administrator must carry out if he wants to install **ETL DataView 3** on his own PC.

All instructions and screenshots refer to the operating system **Windows 7 SP1 32 bit** English.

Section you will only need if you are installing **ETL DataView 3** on your own computer:
Installing **ETL DataView 3**
Installing the PDF-Creator
Setting up the PDF Creator

You must also consider all other sections when changing the system environment, e.g. want to integrate the **ATS400** in a network environment.

2.1 System setup

In this chapter the work is described which must be done by a **Windows** system administrator.

2.1.1 Windows users

On the variants X4 and X5 of the **ATS400** no users can be created on system level since Windows CE does not have users.

On the variants X6 and X8 of the **ATS400** one user with the name `ATS400` is created as adminstrator. This user has no password and is logged on automatically.

You can make the **ATS400** part of a domain and allow to log in with domain accounts. You need additional users only when making the **ATS400** part of a network and the logged in user will use windows explorer or other applications using the network. **ETL DataView 3** will not make use of Windows users and does not support single sign on.

Important

If reports will be created and you will use multiple printers, e. g. for local printing and creating a PDF-file, the logged in user must have local adminstrative rights.

For each user logged into Windows the configuration of the PDF-Creator must be applied again, see here

In chapter Create network drive is described how to use a **ATS400** without adding to a domain to use test plans and store results in a network.

2.1.2 Installing ETL DataView 3

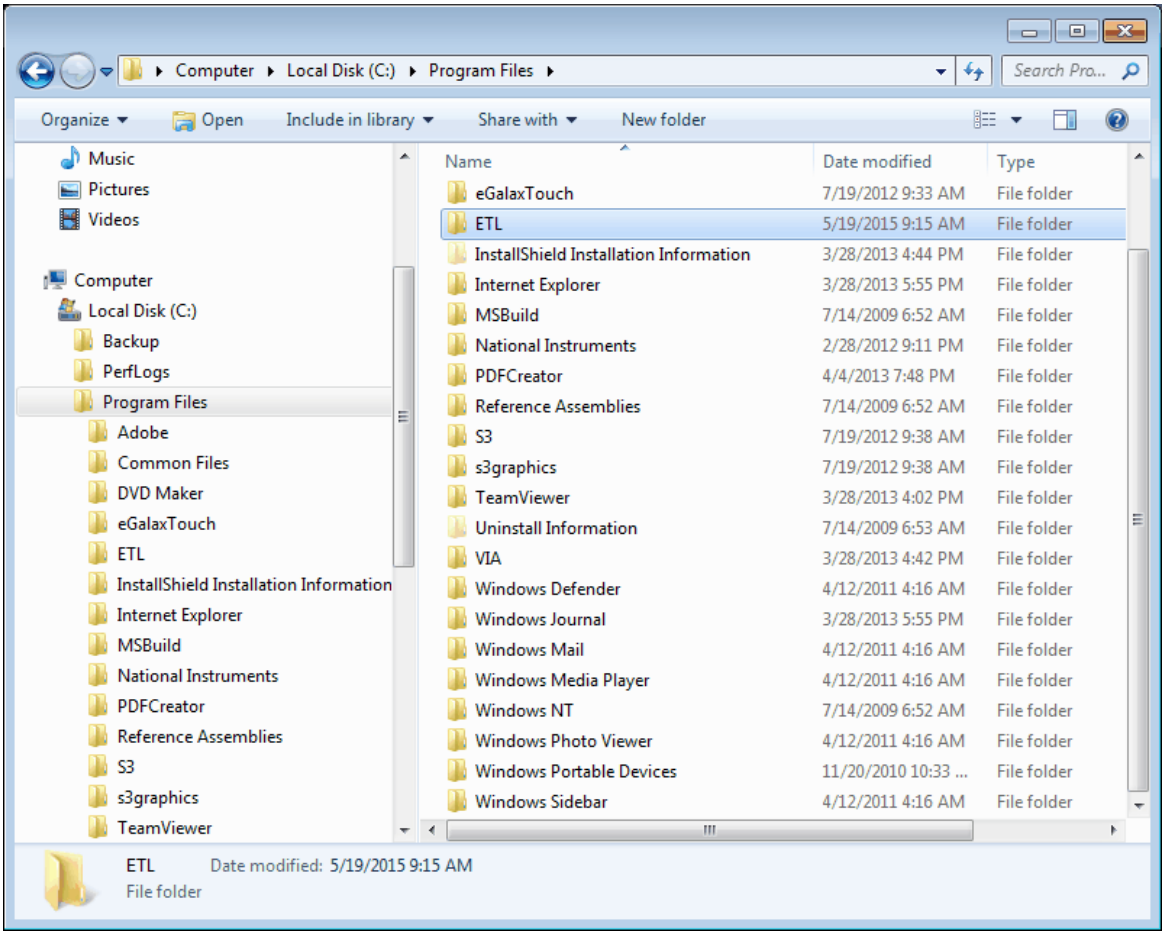
For the here describes installation of **ETL DataView 3** into the programs folder the following conditions must be met:

You must have local adminstration rights.
You must have **ETL DataView 3** on an data storage.
You must have aknowledgement of using **Windows Explorer**.

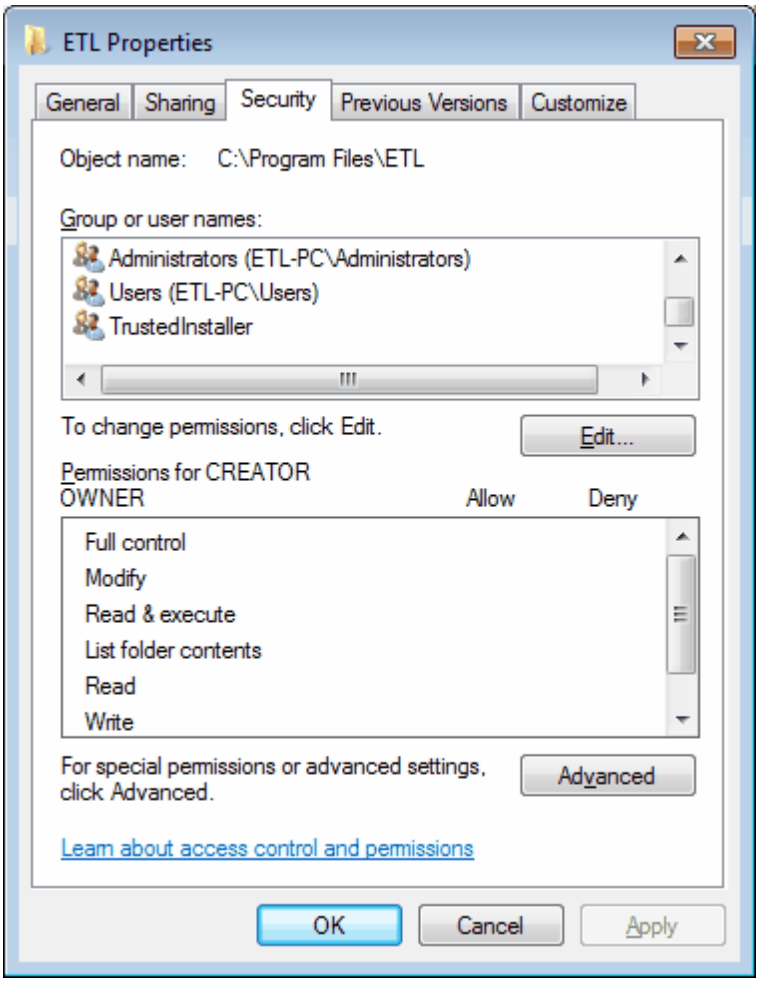
On a **Windows 7 64Bit** system the programs folder is named `Program Files (X86)` instead of `Program Files`.

Dependend on the settings of the User Account Control additional dialogs may be opened. These are not displayed in the following instruction. Additionally some buttons may be overlayed by the administrator symbol.

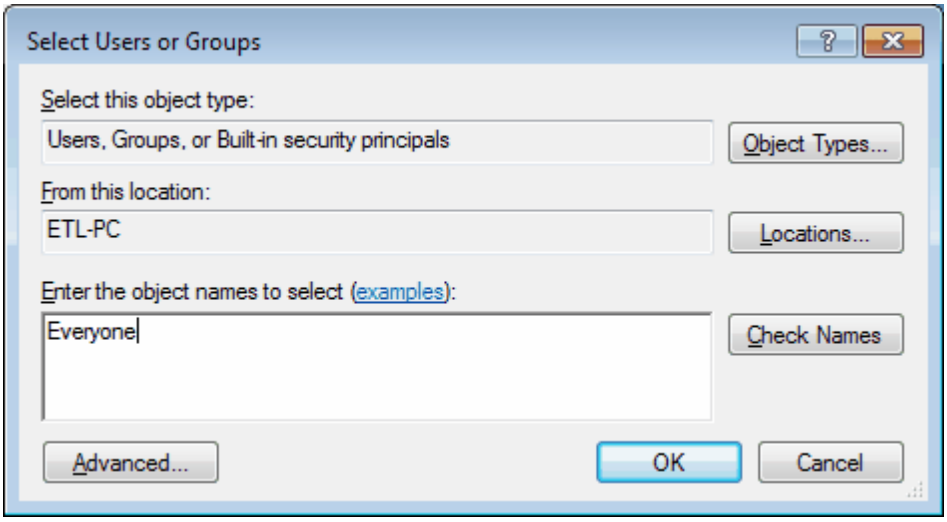
Create a new folder `ETL` in the programs folder of the PC.



Open using the contex menu the dialog **Properties** and step to the property page **Security**. Click on the button **Edit...**.

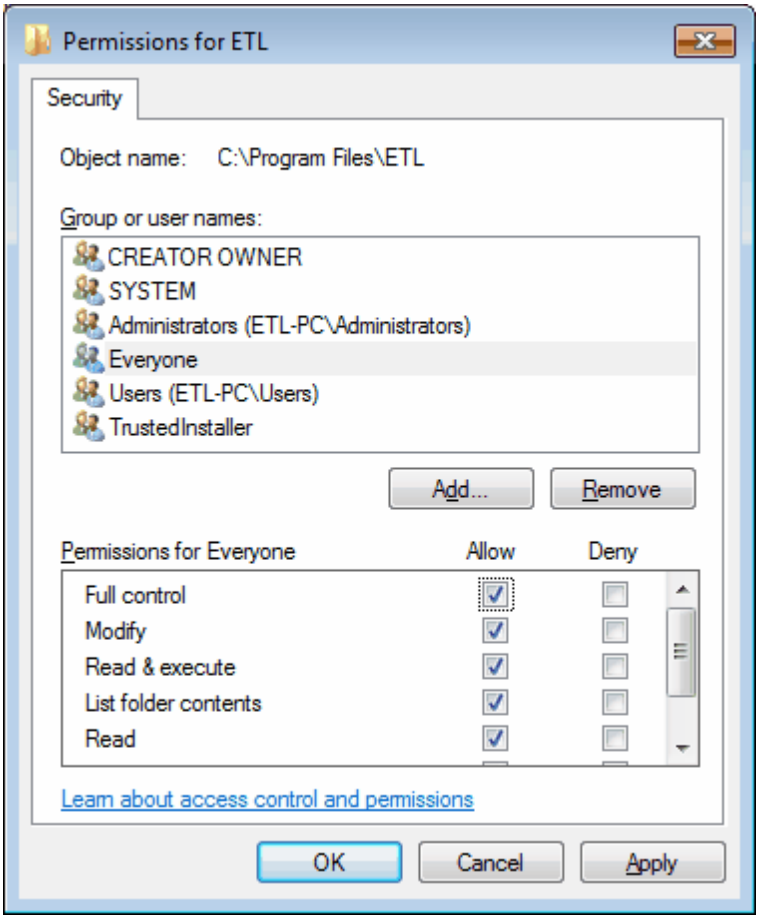


Click in the following dialog on the button **Add...**.



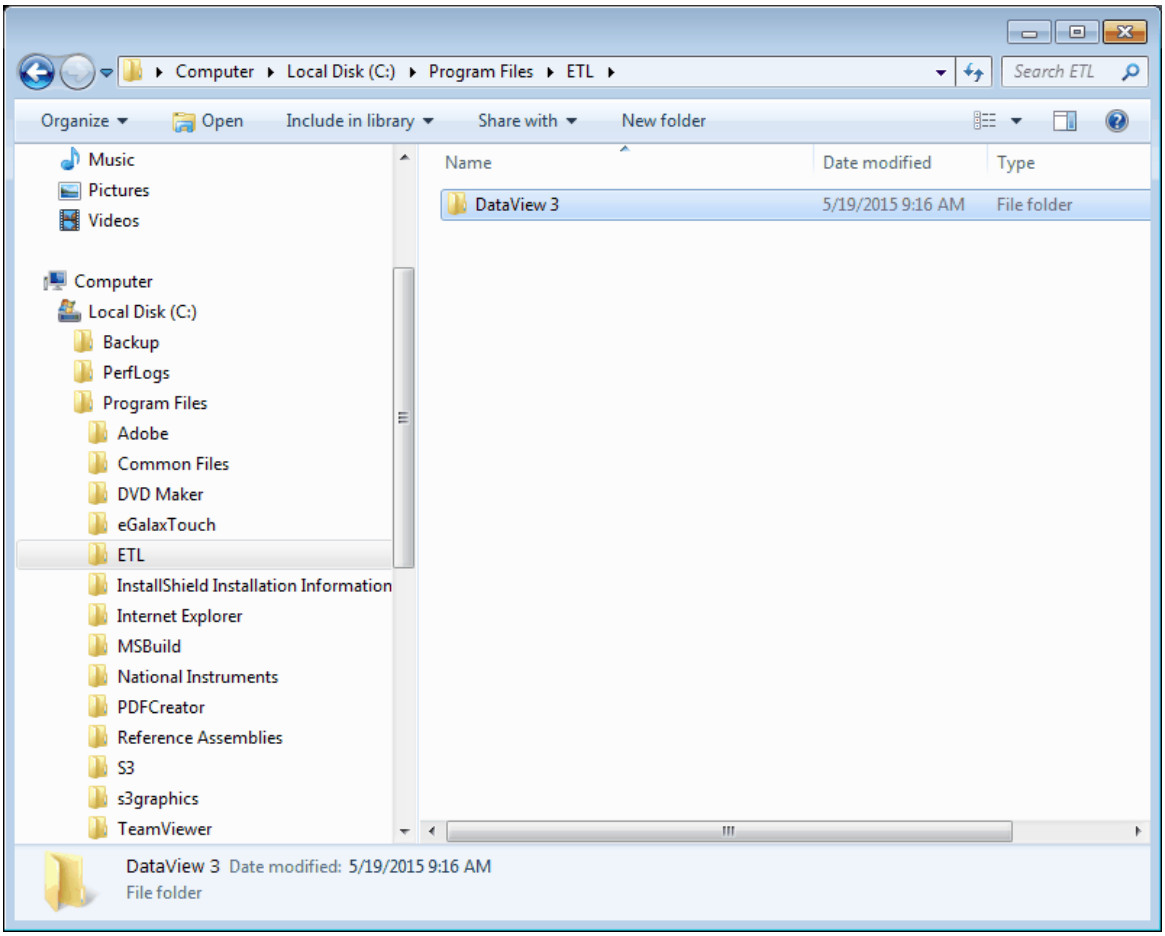
Enter **Everyone** and close the dialog with the button **OK**.

Activate for **Everyone** the checkbox **Full control** in column **Allow**.



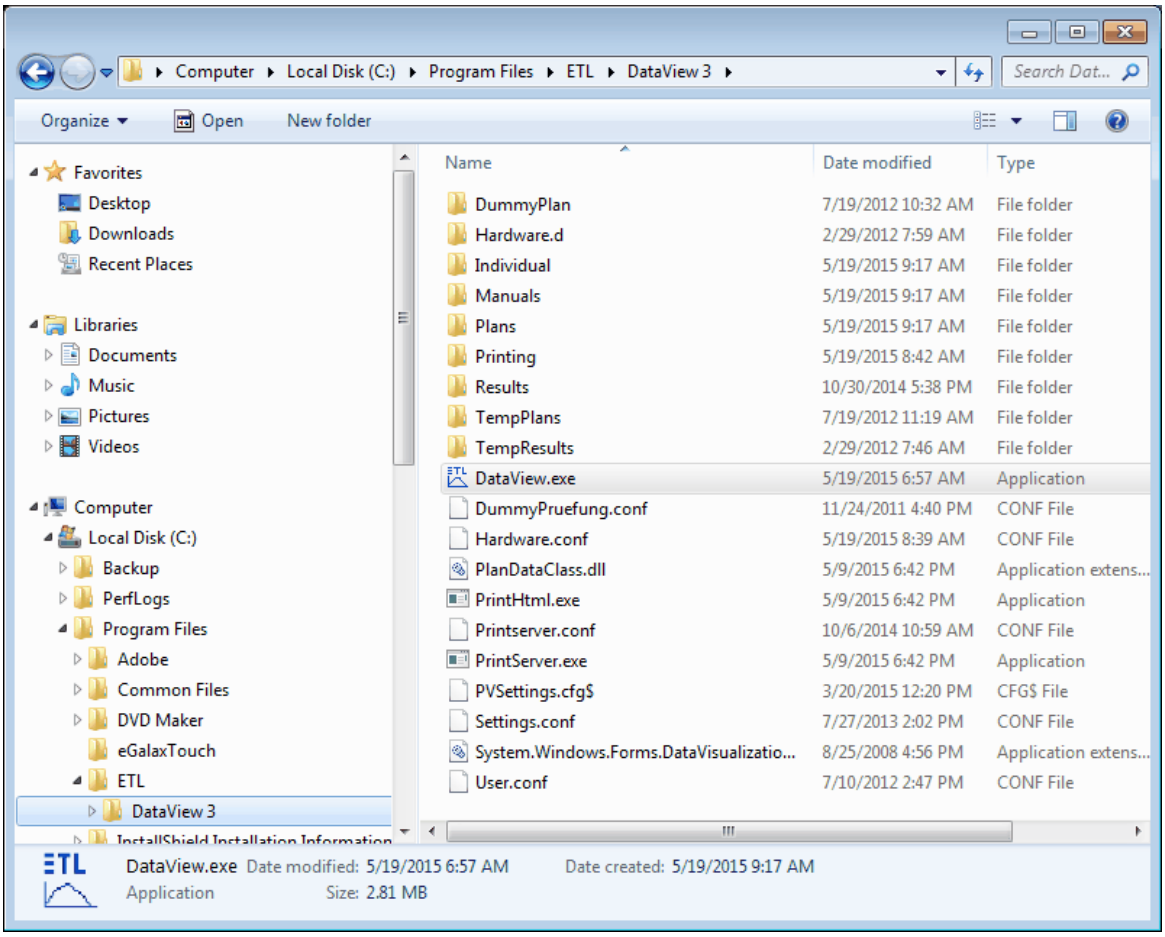
Close both dialogs with the button **OK**.

Navigate to the folder **ETL** and create a new folder **DataView 3**.

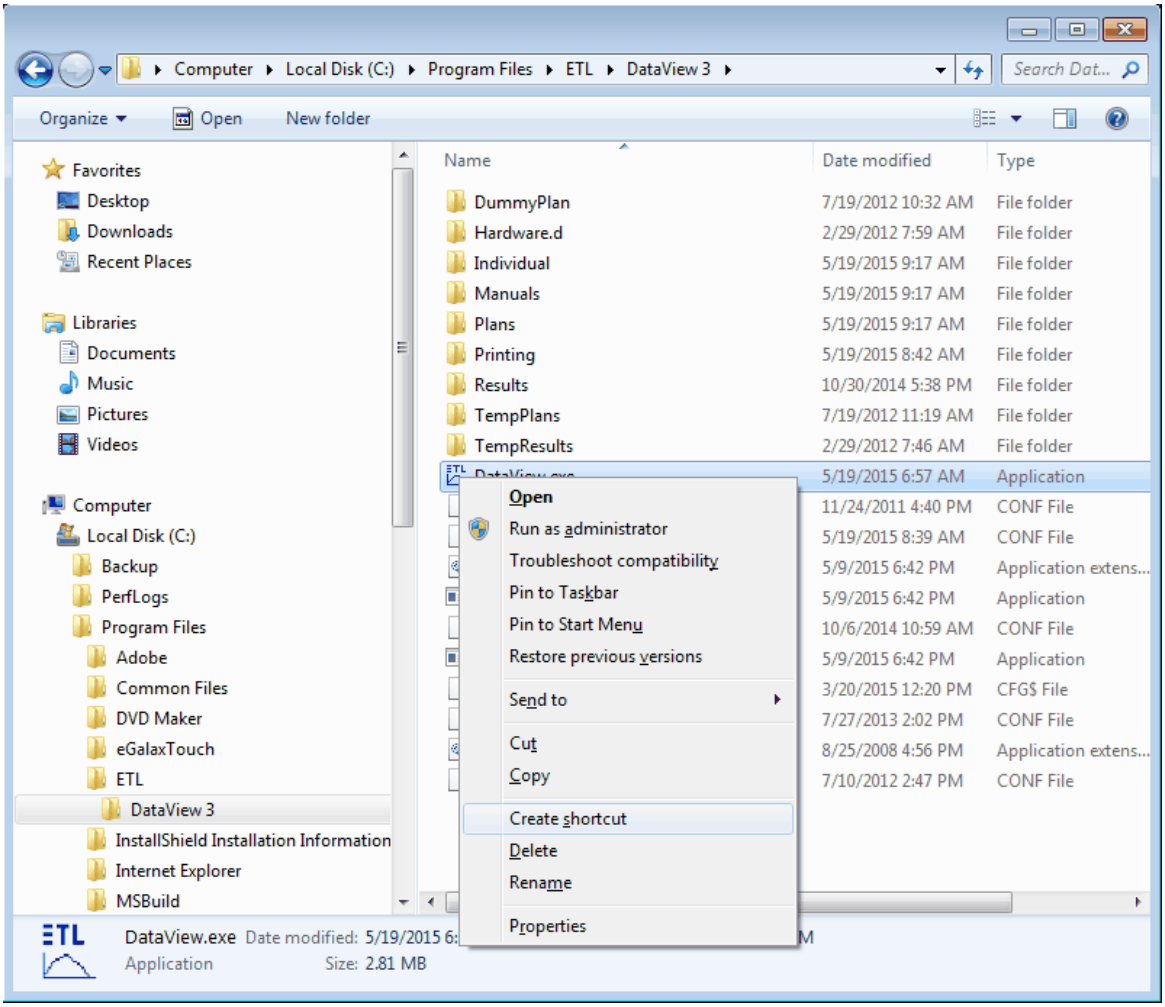


Copy the files for **ETL DataView 3** from your data storage to **DataView 3**.

This folder should now contain the files like in the following screenshot.



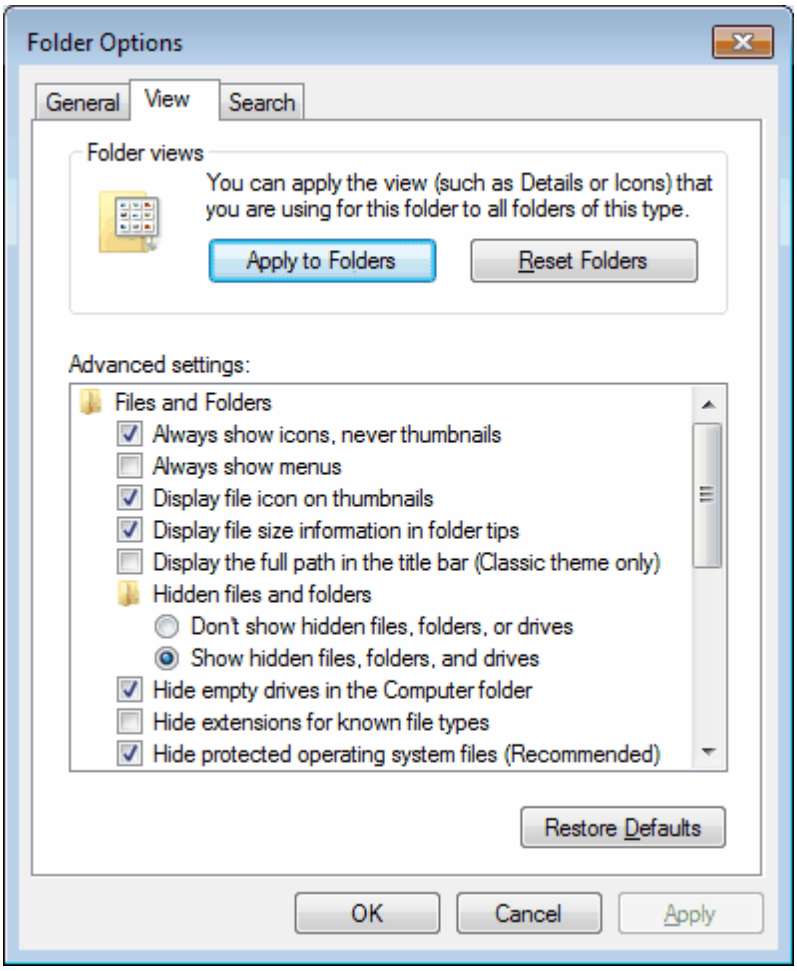
Create a shortcut for **ETL DataView 3**.



Rename the shortcut into `ETL DataView 3`.

Allow **Windows Explorer** to show hidden files and folders. Open under `Organize` the `Folder and Searchoptions`. Step to property page `View`.

Activate the radio button **Show hidden files, folders and drives**. Close the dialog with the button **OK**.



To offer a start from the desktop copy the shortcut to the folder **C:** -> **Users** -> **Public** -> **Public Desktop**.

To enable a start when a user logs in copy the shortcut to the folder **C:** -> **ProgramData** -> **Microsoft** -> **Windows** -> **Start Menu** -> **Programs** -> **Startup**.

Important

Before using **ETL DataView 3** you must configure the serial port.

2.1.3 Installing the PDF creator

ETL Prüftechnik uses the PDF creator in version 1.6.2 to create PDF documents.

The PDF creator is already installed on the ATS400 variants X6 and X8. For the ATS400 variants X4 and X5, it is not possible to install the PDF creator.

You only need to carry out the activities in this section if you are installing **ETL DataView 3** on your own PC and want to use the creation of PDF files as the report option.

Download the PDF creator from the site ftp://ETL-FTP:d0wn10ad@134.98.90.37/Tools/PDFCreator-1_6_2_setup.exe.

Copy the downloaded setup program to the computer to be used. To this end, we recommend using the `C:\Setups` folder. If the device is connected to a company network, please disconnect the network connection by removing the cable. This means that you will not need to reply to additional dialogues, and no further unnecessary components will be installed.

Start the setup by right clicking on the file and selecting `Run as an administrator`.

Then follow the standard setup. Part of the dialogues are not displayed if the computer is not connected to a network.

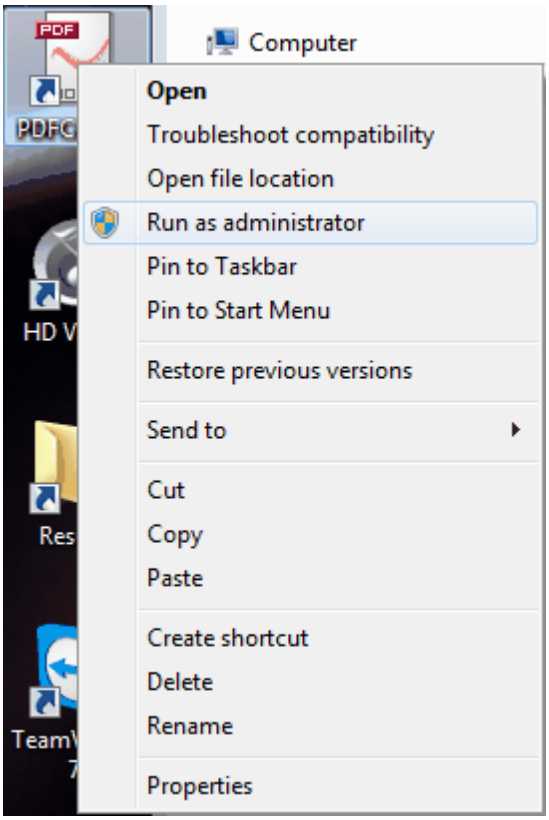
2.1.4 Setting up the PDF creator

To automatically save the PDF files, the PDF creator needs to be set up accordingly. A corresponding printer profile is created.

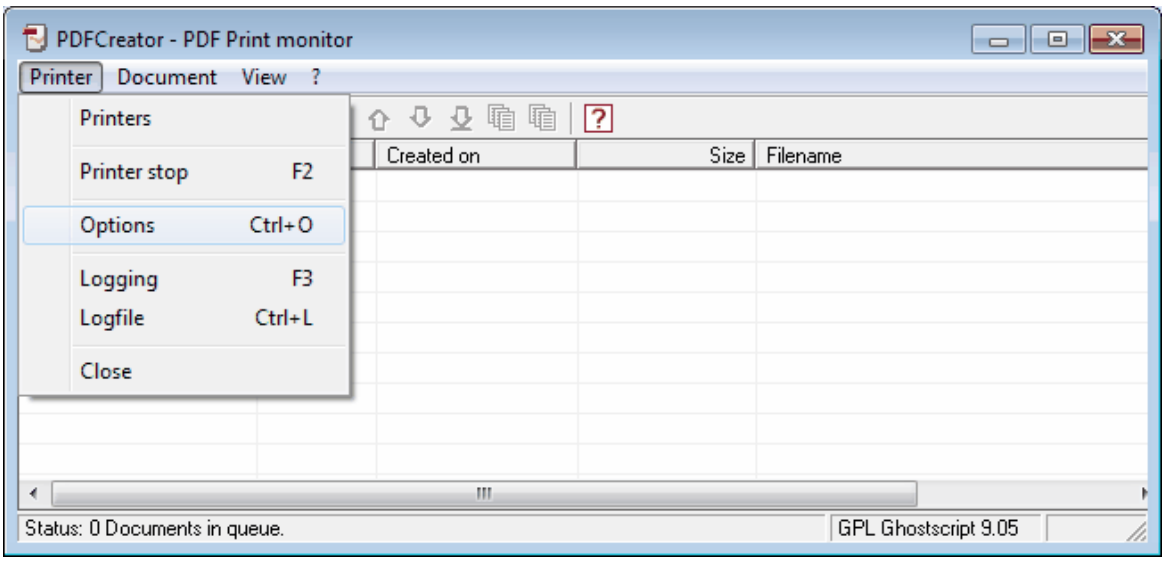
Important

For every user logged into **Windows**, this setup will partly have to be made separately.

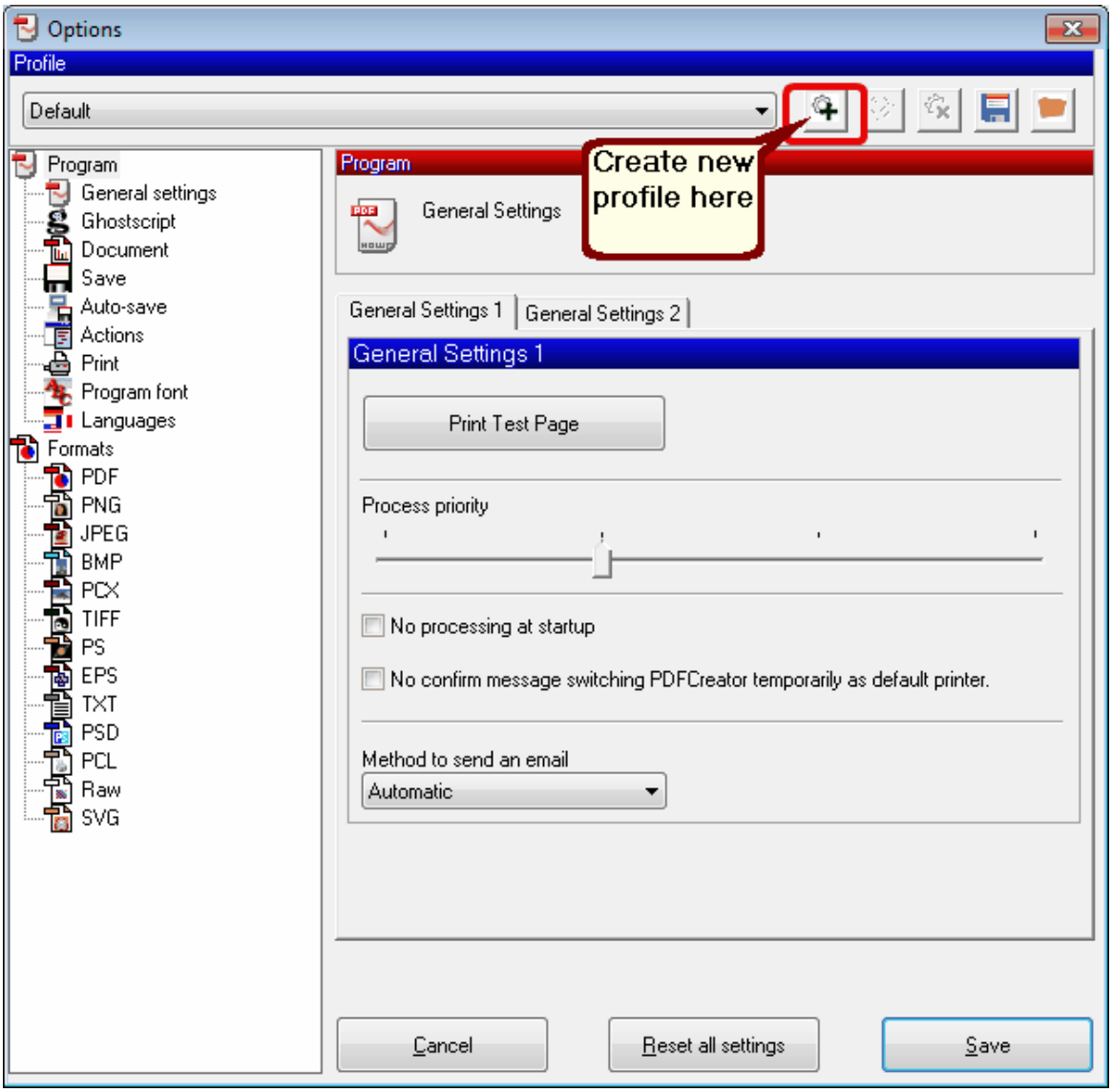
Start the setup by right clicking on the desktop on the PDF creator icon. Select **Run as an administrator** from the menu.



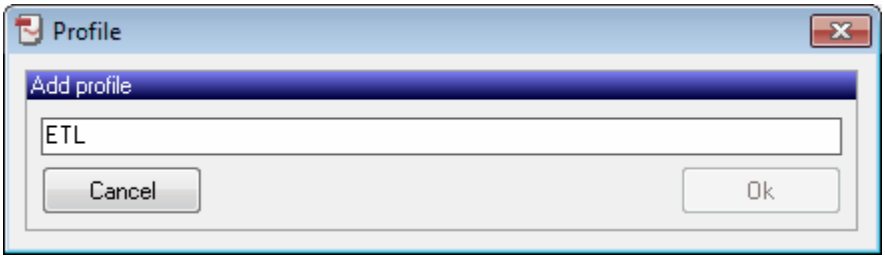
Select **Printer** -> **Options** from the menu.



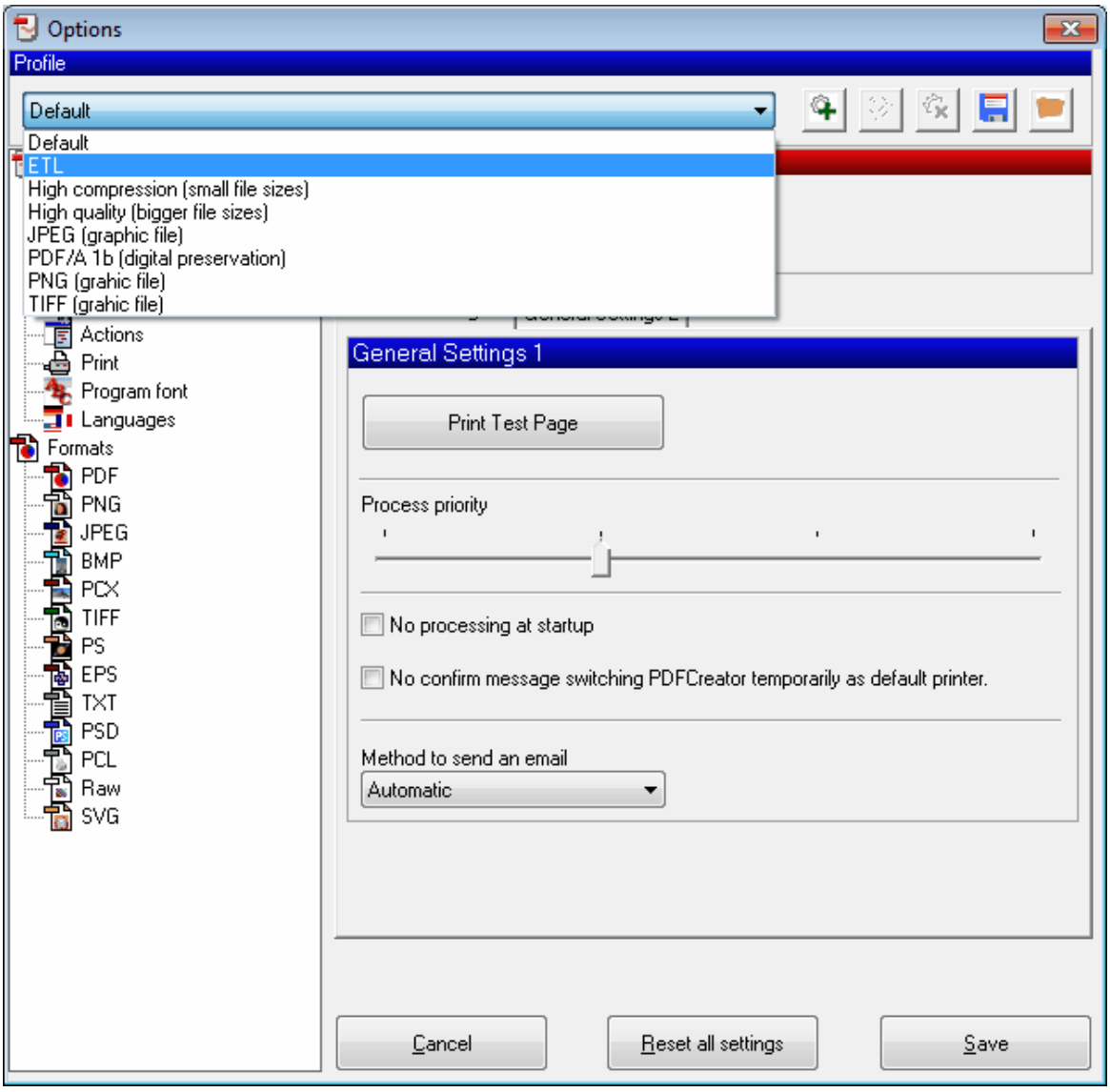
Create a new profile by clicking on the button with the **plus symbol**.



A window **Profile** opens, enter **ETL** and confirm with **Ok**.

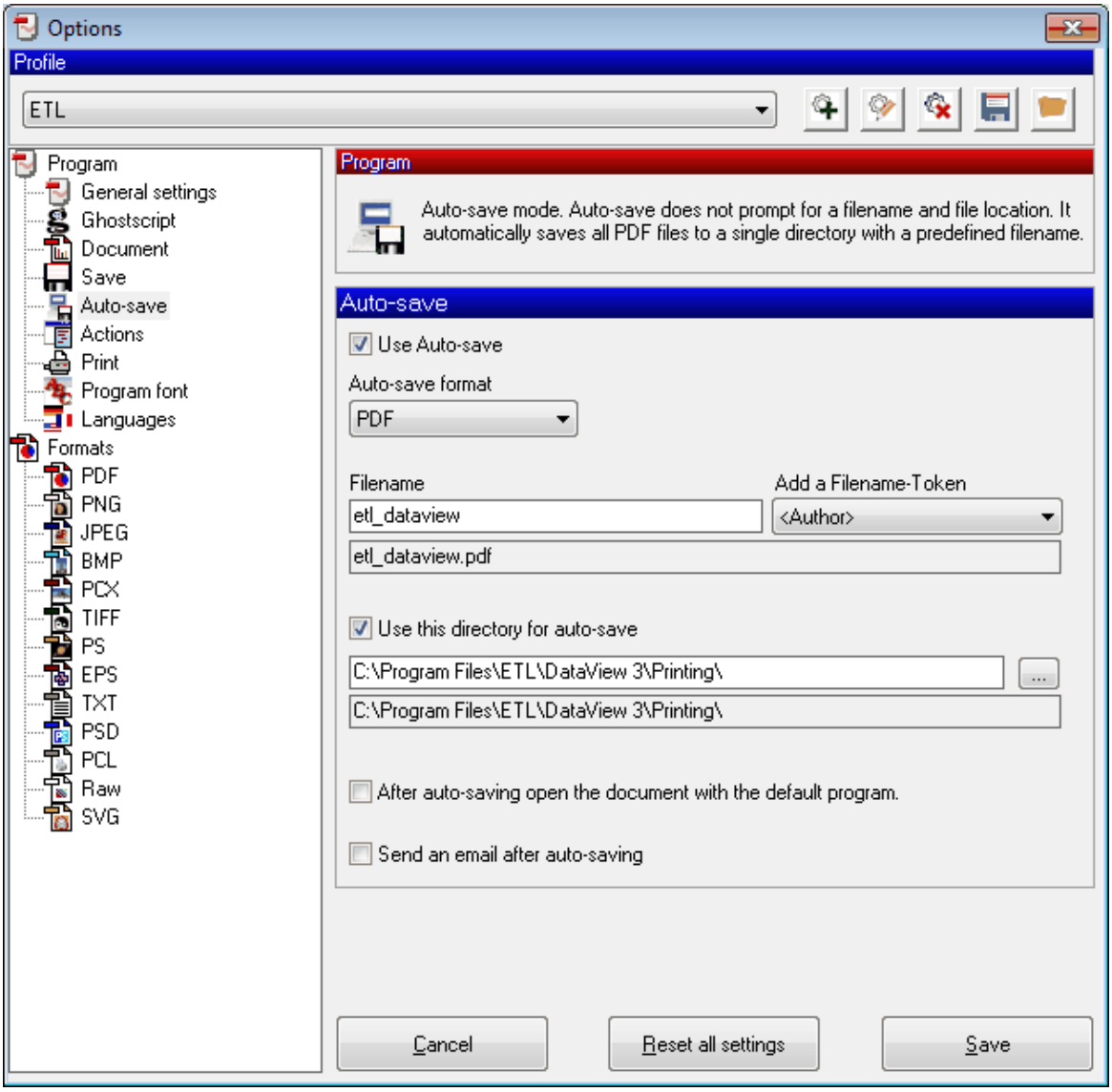


In the list box, in addition to **Standard**, **ETL** is now also included as a profile. Select **ETL** to change the settings.

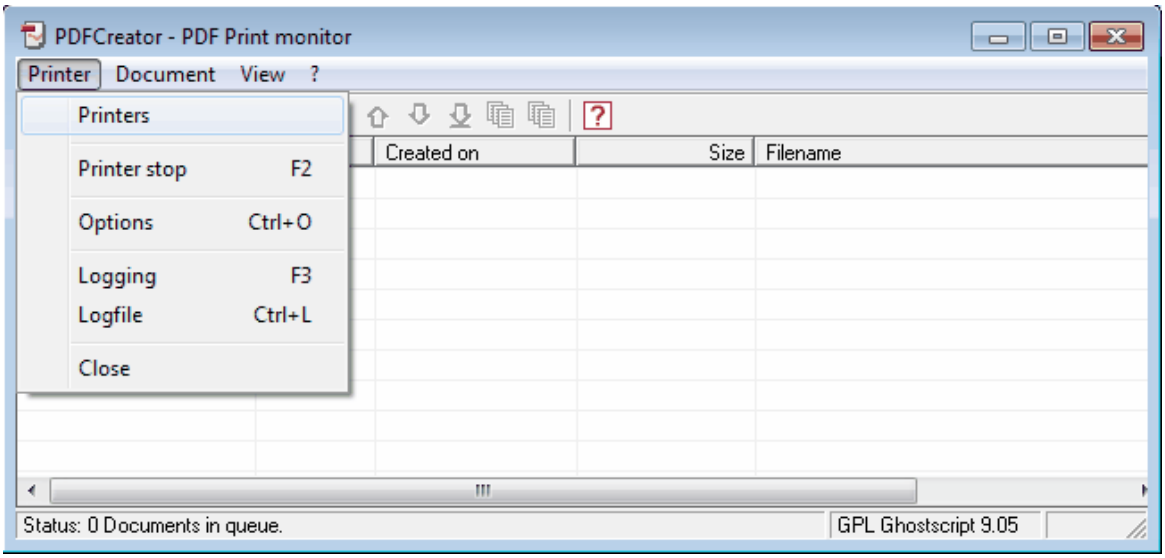


For the **ETL DataView 3** to automatically create PDF files, the **Auto-save** tab needs to be saved. The file name and the directory must be stated precisely in doing so.

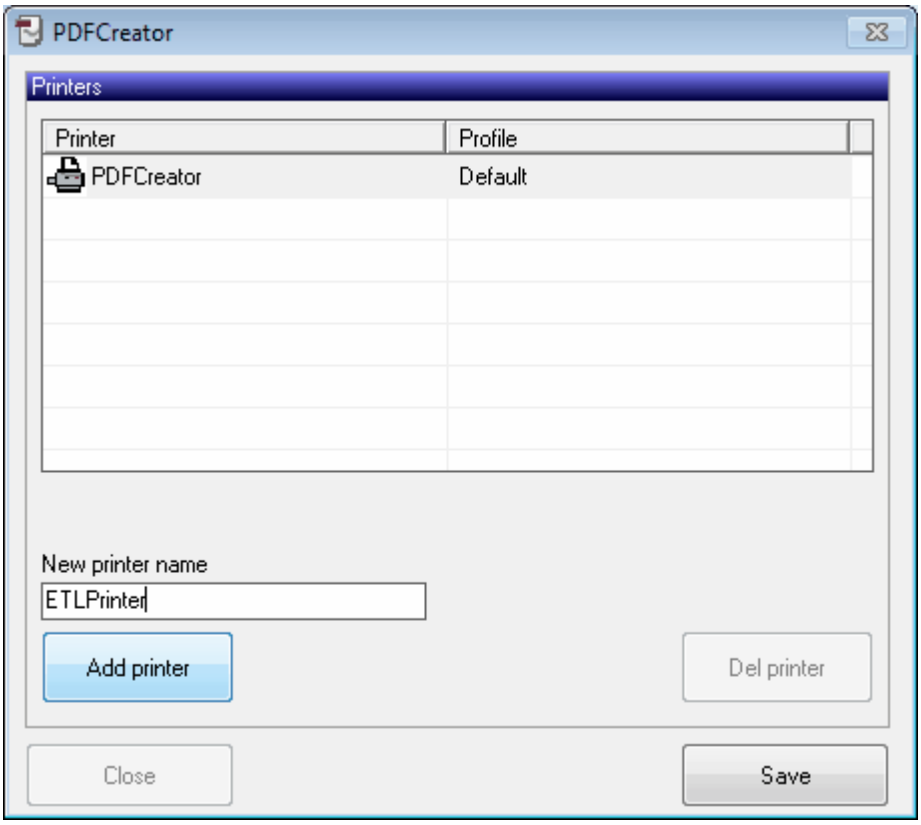
Activate the **Use 'Auto-save'** checkbox.
Enter the **etl_dataview** value in the **Filename** field.
Activate the **Use this directory for auto-save** checkbox. Select the **C:\Program Files\ETL\DataView 3\Printing** folder in the relevant field.
End the dialogue with the **Save** button. The window will close.



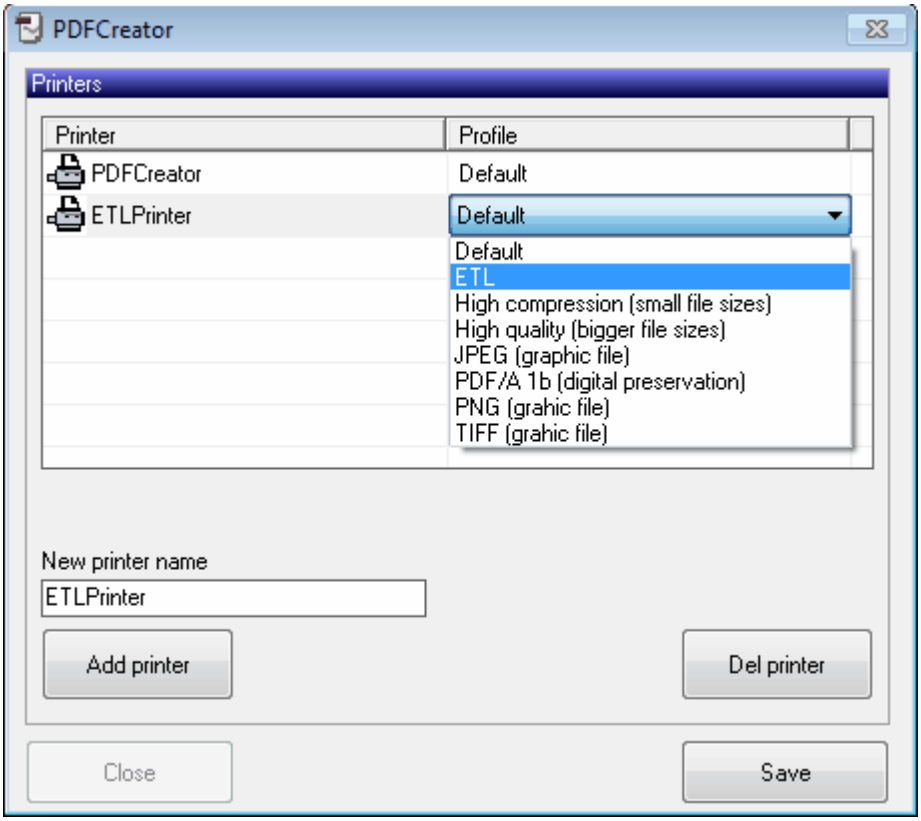
Select from the **Printer** -> **Printers** menu.



In the **New printer name** field, enter **ETLPrinter** and confirm the **Add printer** button. If the **Add printer** button cannot be selected, the setup program was not started with administrator rights.



Change the profile of the ETLPrinter to **ETL**.
End the dialogue with the **Save** button.



2.1.5 Adding to a network

ETL DataView 3 is able to store test plans and result files in a mapped network drive. You can use one share to store all files or two separate shares for test plans and result files. You can use different hosts for test plans and result files. Preparing you need the following details:

When using a fixed IP address:
- IP address of the DNS server, z. B. 10.2.1.50
- IP address of the locale system, z. B. 10.2.1.186
- Subnetmask of the network, z. B. 255.255.255.0

In all cases:
- Name of the host, e. g. etldats
- Name of the share for the test plans, e. g. etl_nobackup
- Name of the share for the result files, e. g. etl_nobackup
- Name of the domain, e. g. etl.local
- Name of the user with sufficent rights for the share
- Password of the user with sufficent rights for the share

To do the work you need a USB-keyboard an propably a mouse. Be aware that on the variants X4 and X5 you can use only the left USB connector of the system. To

connect more than one device you also need an USB-hub.

With the variants X4 or X5 the integration is done in **ETL DataView 3**.

With the variants X6 or X8 the integration can be done in **ETL DataView 3**. It is also possilble to do the integration using a network drive.

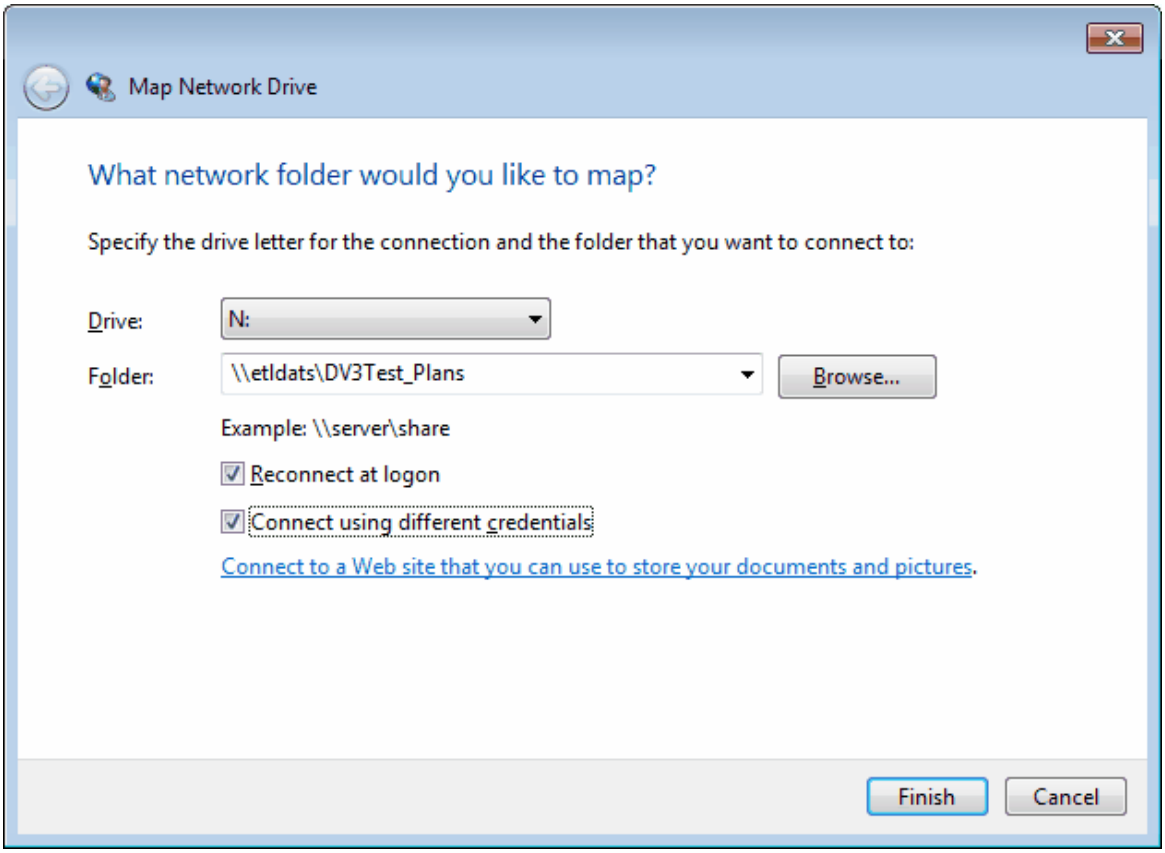
2.1.5.1 Variants X6 or X8

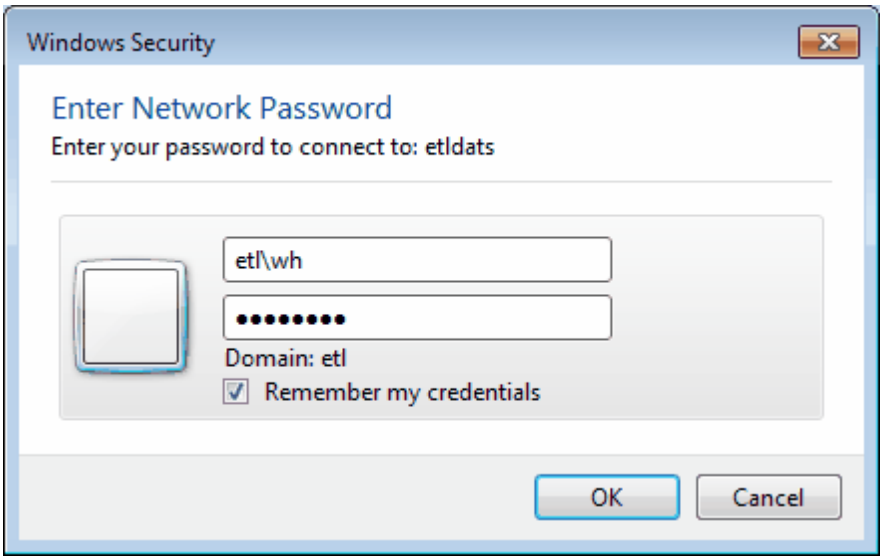
2.1.5.1.1 Create network drive

It is not neccessary to integrate the **ATS400** into a domain to load test plans or store result files on to a network drive.
You must know the domain name, the share name, the user and the password.

If you want to use any drive letter you map it in **Windows Explorer**.

Select in the folder view the entry `Computer` and choose for the menu bar `Map network drive...`. Enter into the following dialog your connection an user data. Activate the checkboxes like displayed.



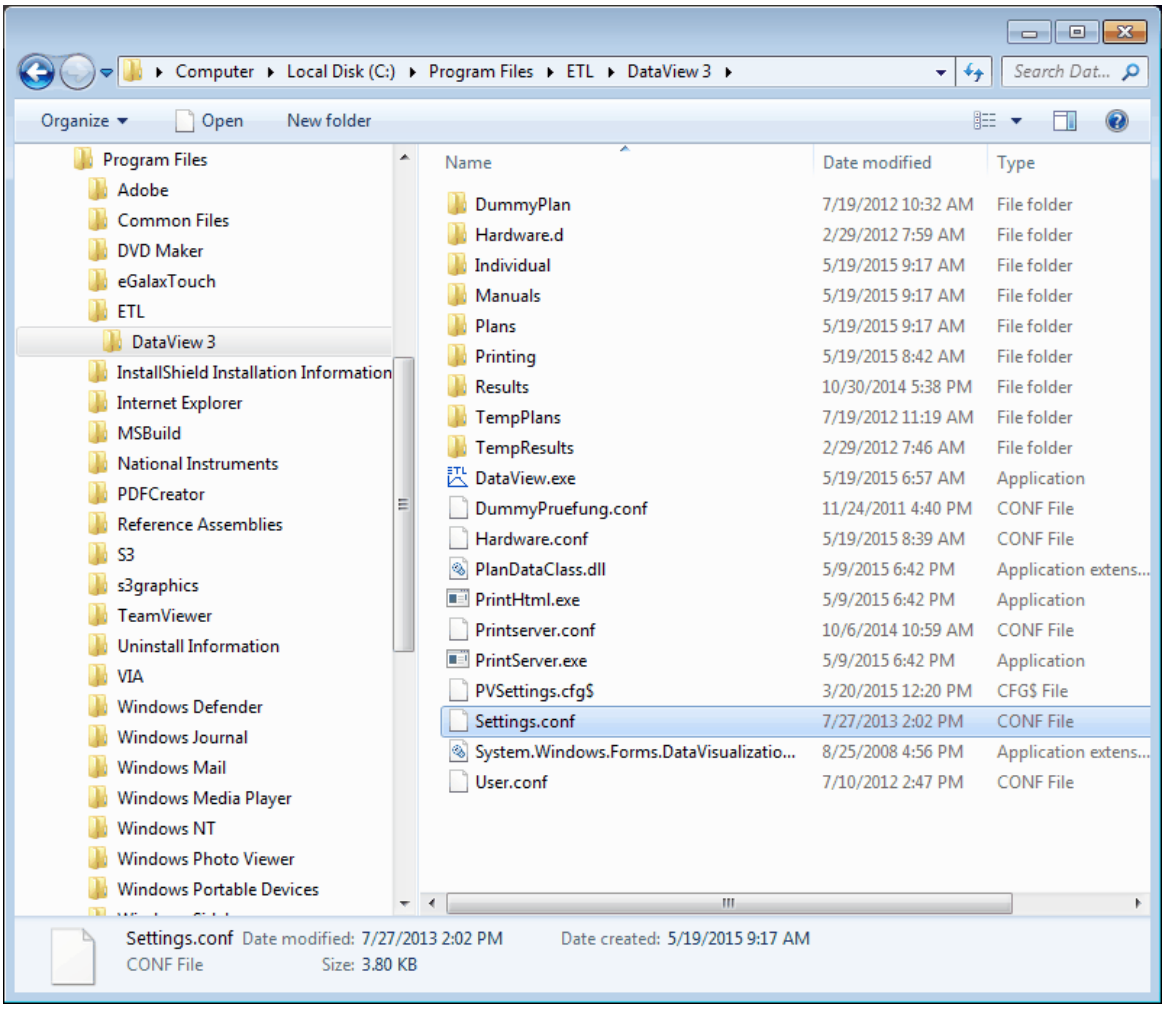


Alternatively you can map the drive using a batch file in the startup folder. This integration must be done by your system administrator.

You cannot setup this configuration in **ETL DataView 3**. You must apply this settings manually. In the following example it is assusmed that you will store the test plans on drive N:\ and the result files on drive M:\.

Check in **ETL DataView 3** that under `Settings` -> `File storage` -> `Results` -> `Storage` the radio button `Local` is activated.

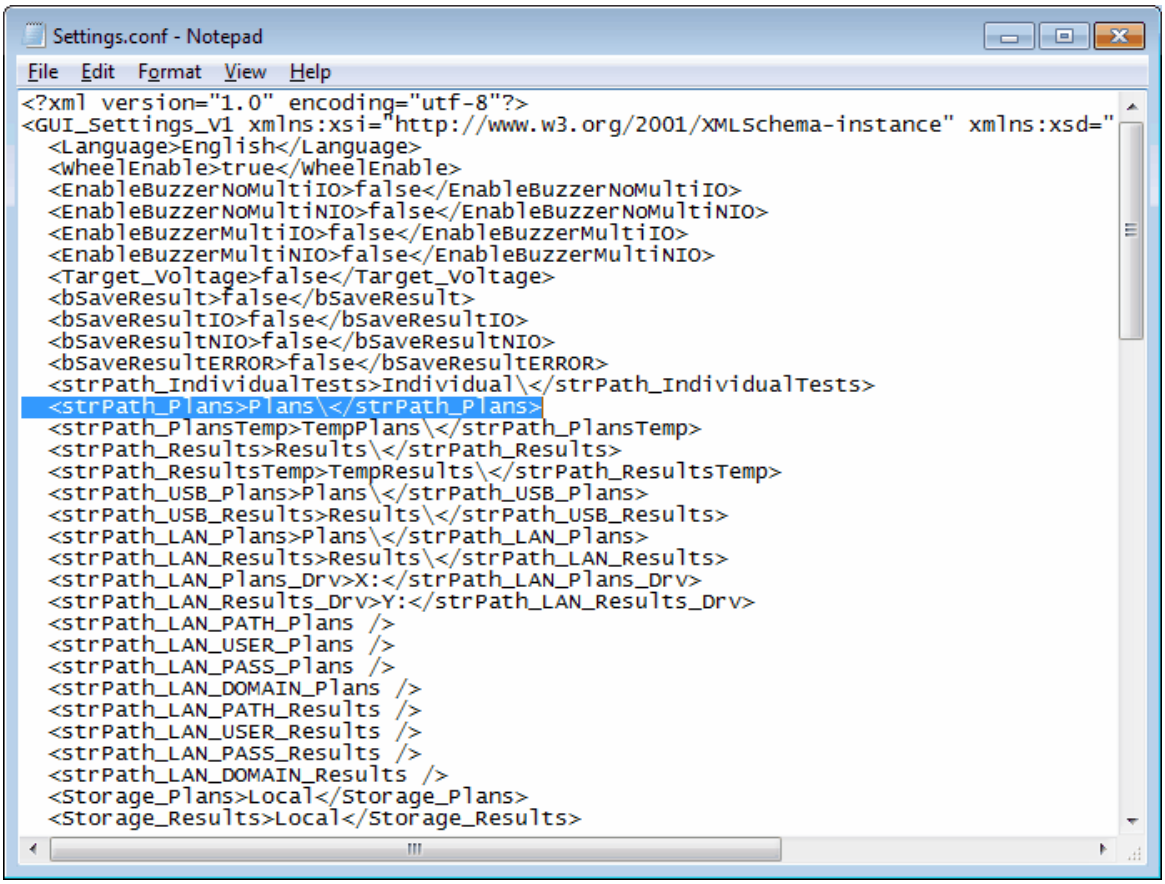
Navigate in **Windows Explorer** to the folder `C:\Program Files\ETL\DataView 3`. Open the file `Settings.conf` with the Windows Notepad.



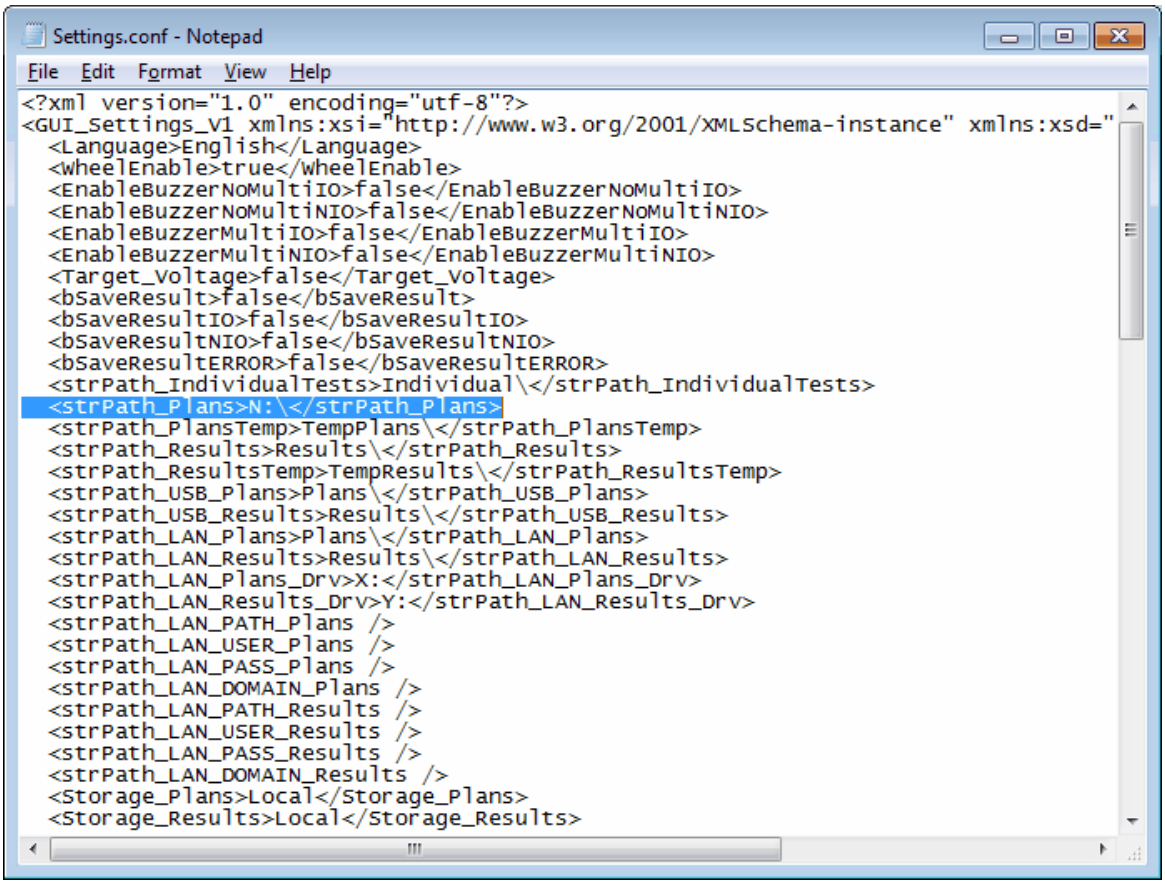
Open the file with a double click and select in the opening dialog `Select a program from a list of installed programs` and close it with the button `OK`.

In the next dialog choose `Notepad` and close the dialog with the button `OK`.

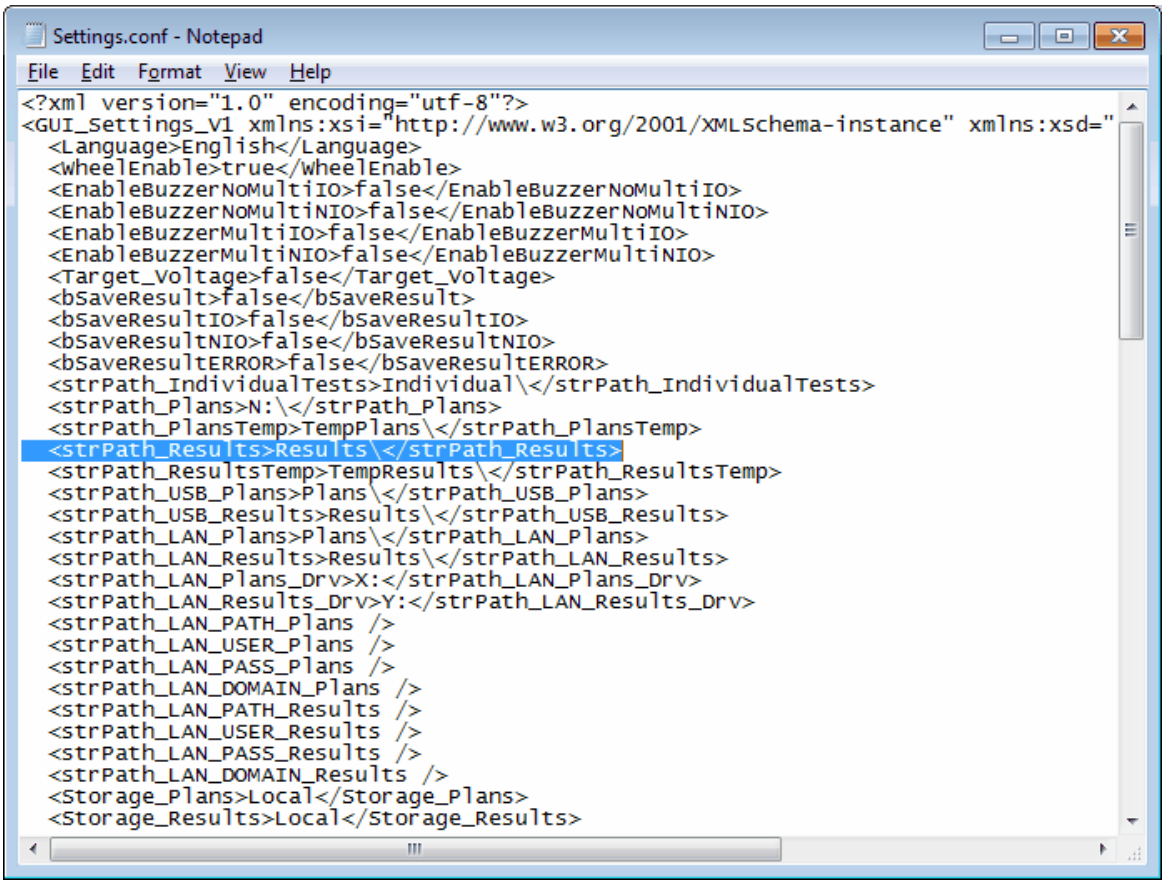
Windows Notepad will open. Find the line with the entry **strPath_Plans**.



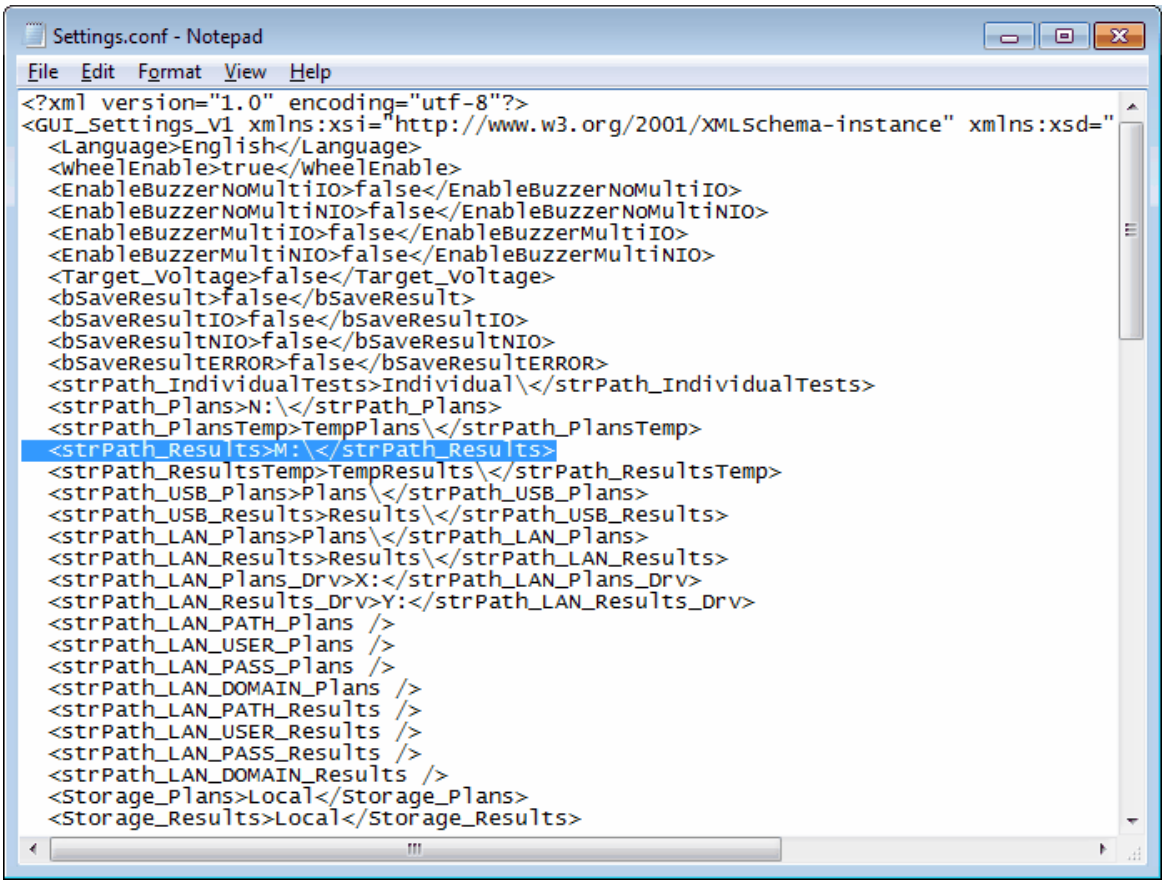
Change the text **Plans** into **N:**. Be carefull not to forget the ending character ****.



Find the line with the entry **strPath_Results**.

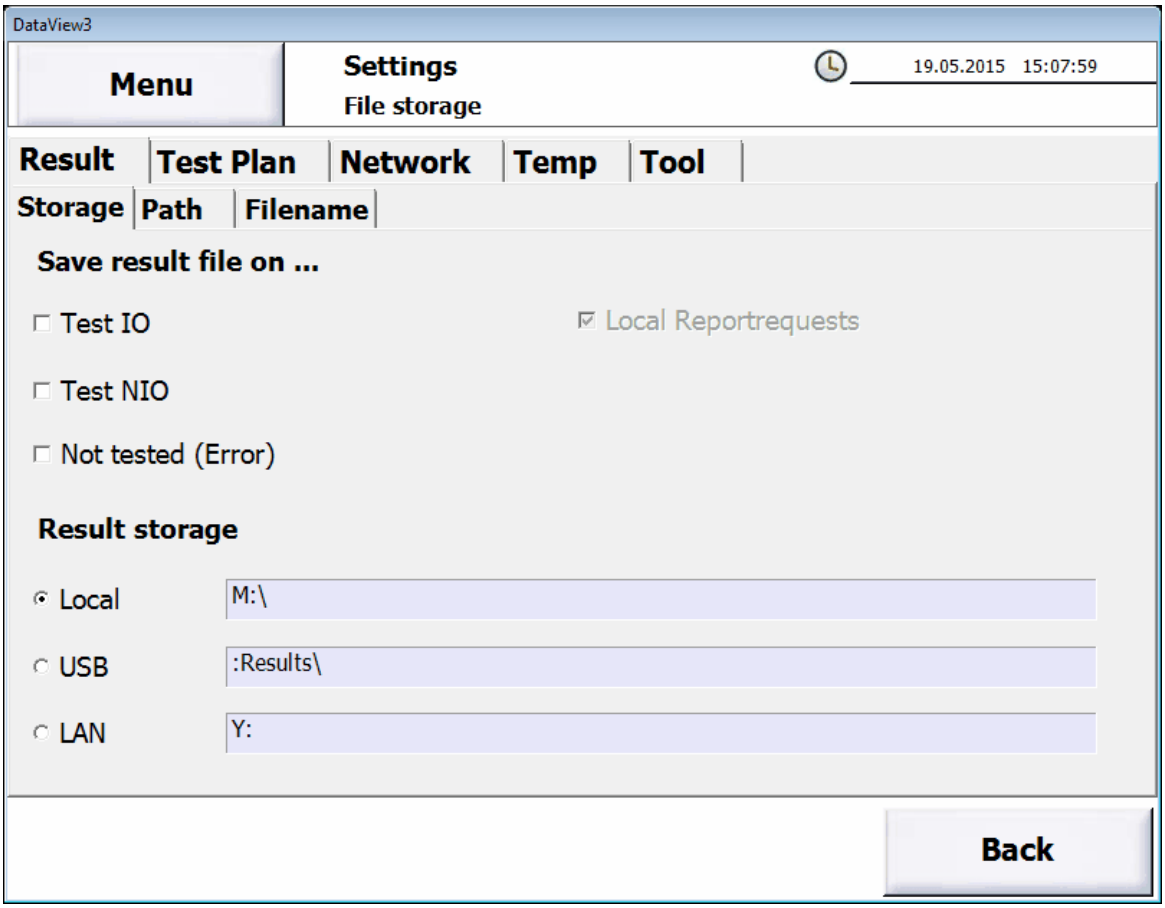


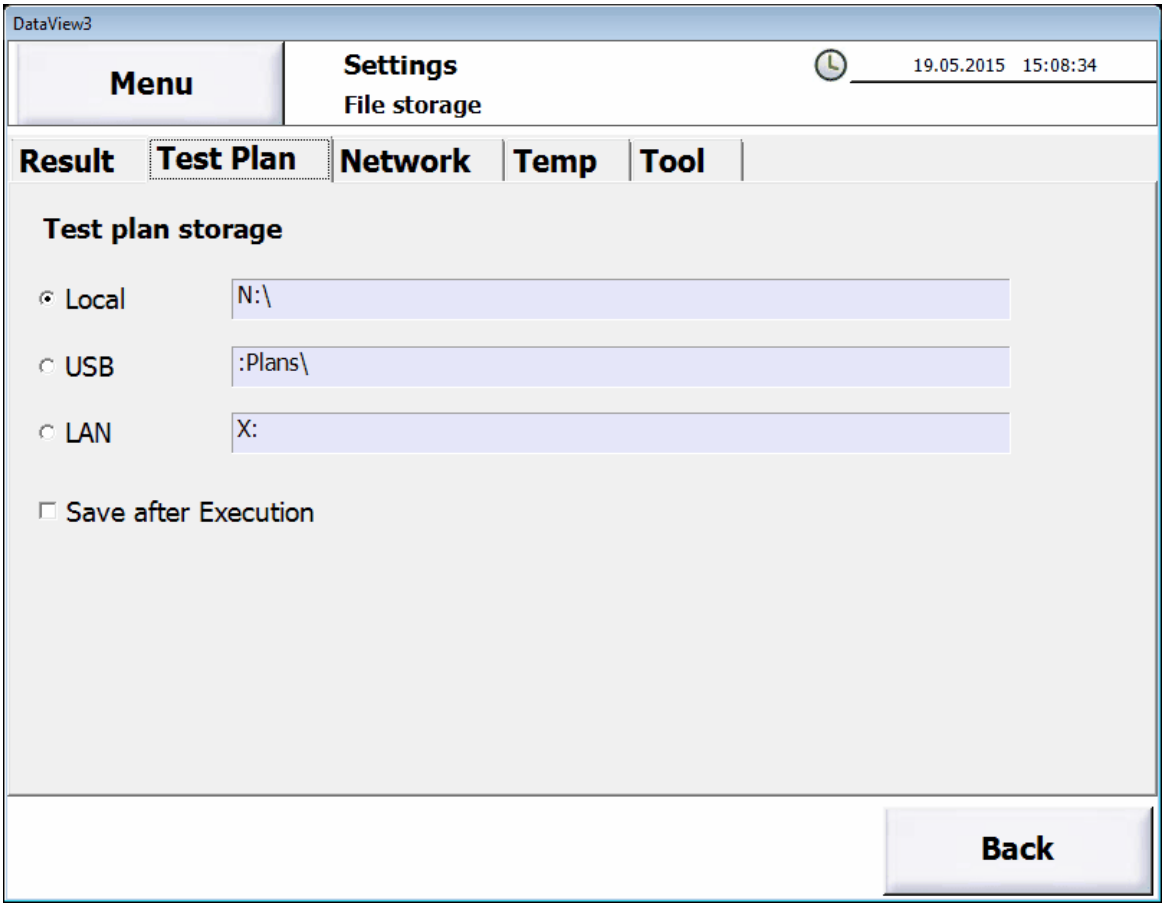
Change the text **Results** into **M:**. Be carefull not to forget the ending character ****.



Save the file and close Notepad.

In **ETL DataView 3** the entries are now visible under `Settings` -> `File storage`.

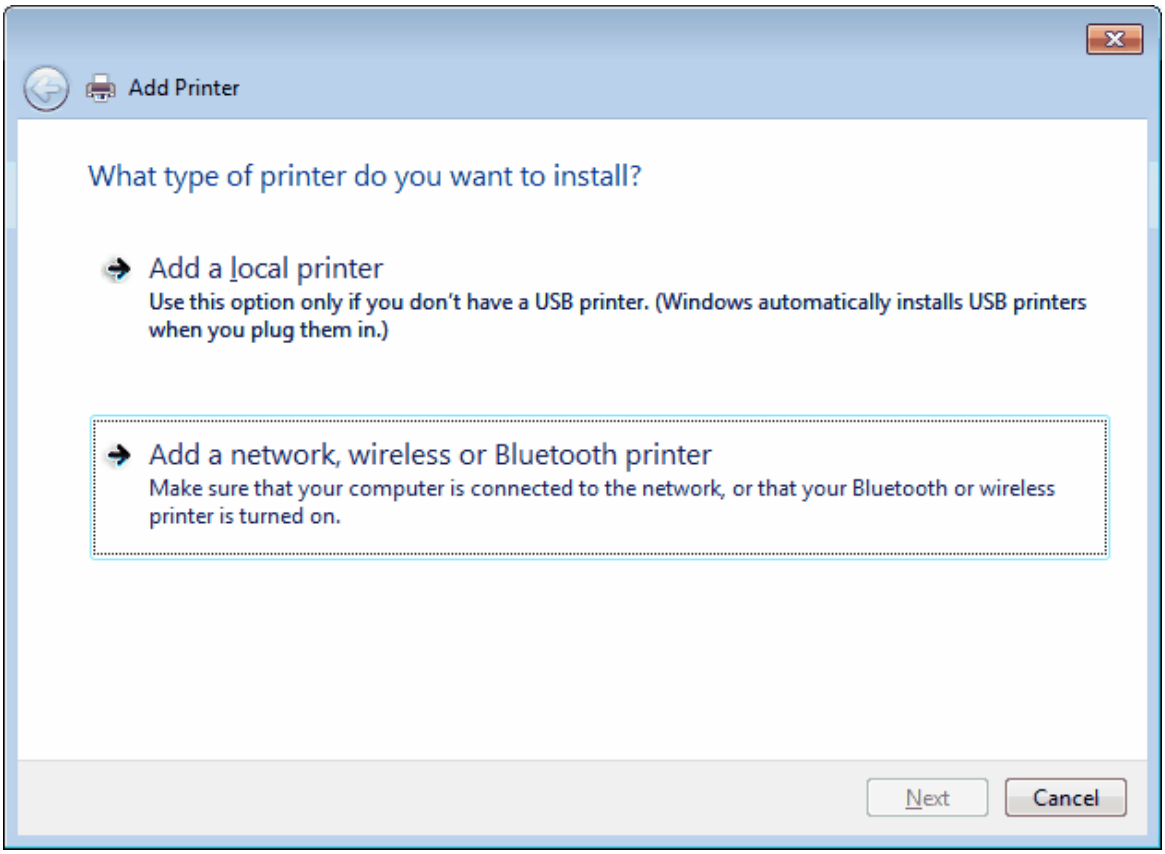



DataView3
Menu
Settings
File storage
19.05.2015 15:08:34
Result
Test Plan
Network
Temp
Tool
Test plan storage
Local
N:\
USB
:Plans\
LAN
X:
Save after Execution
Back

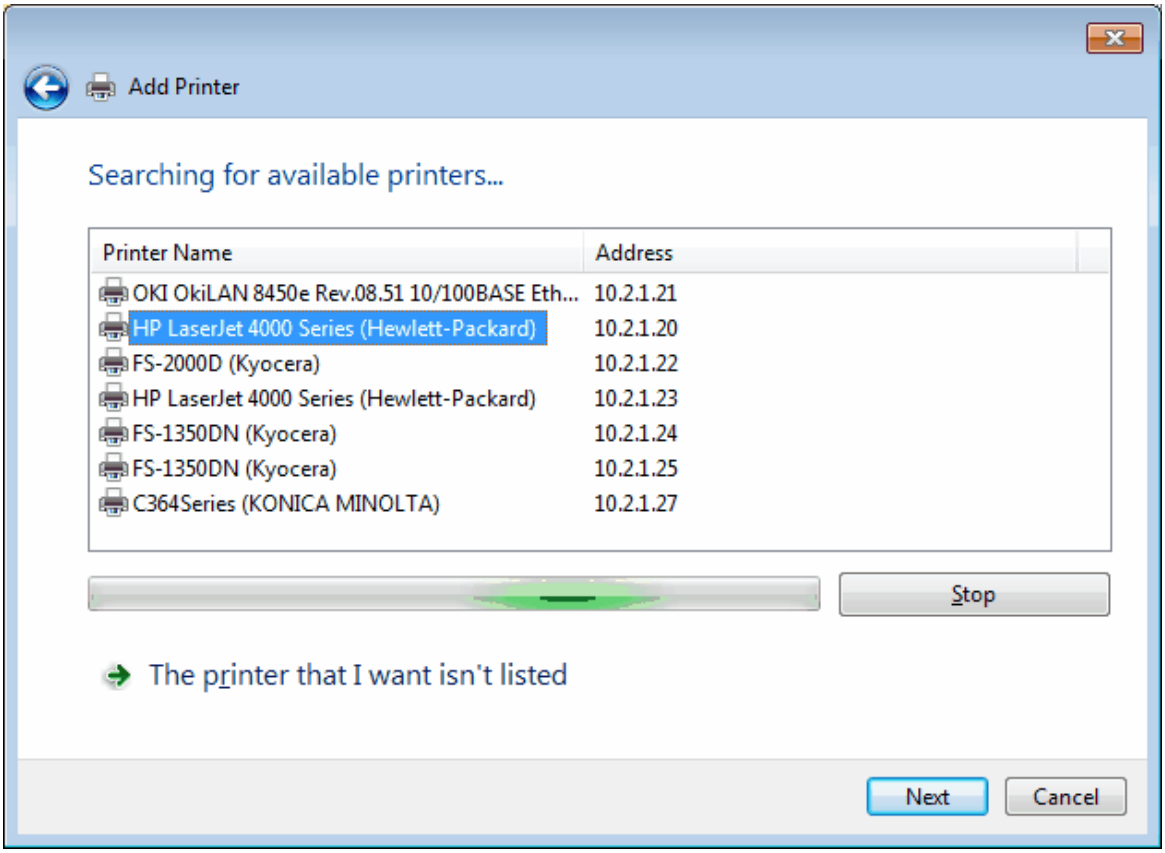
2.1.5.1.2 Setup a network printer

If you want to use a network printer you must setup the printer in Windows.

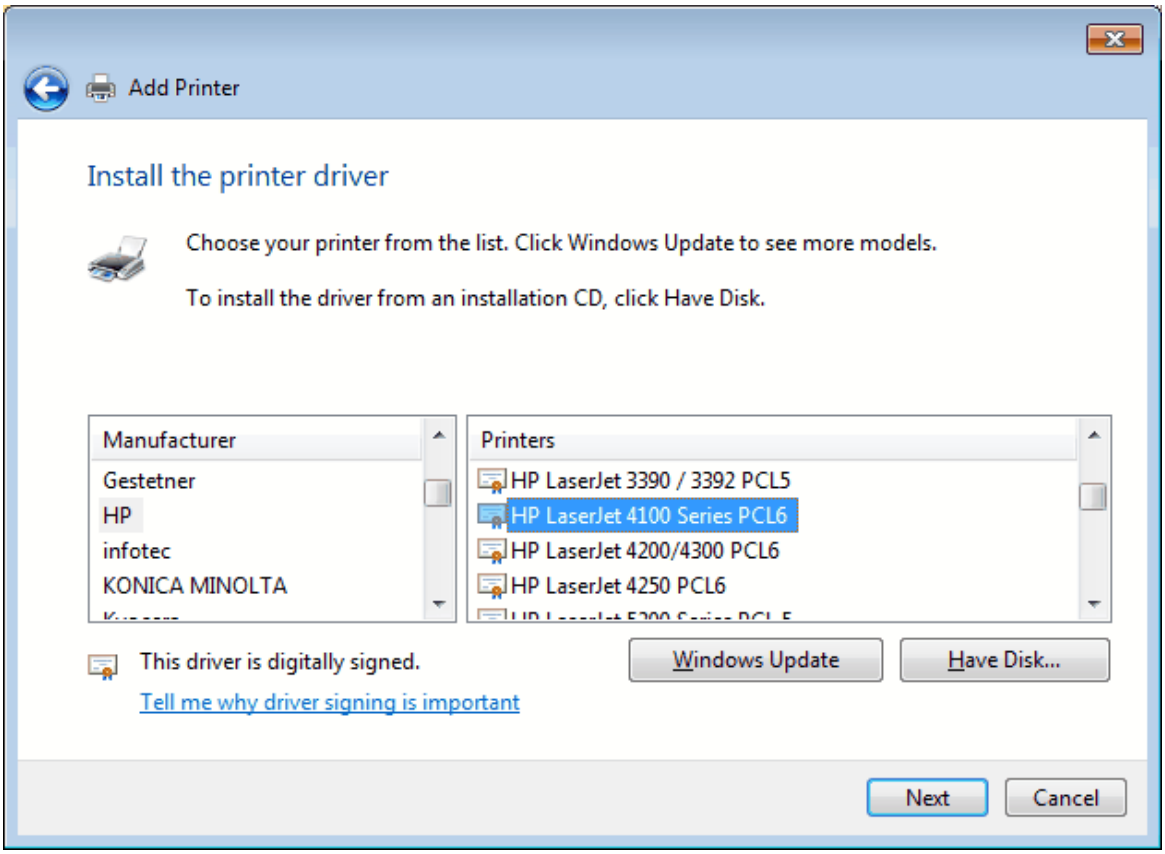
Open **Devices and Printers** from the start menu. Chose from the menu bar **Add a printer**. In the opening dialog choose **Add a network, wireless or Bluetooth printer**.



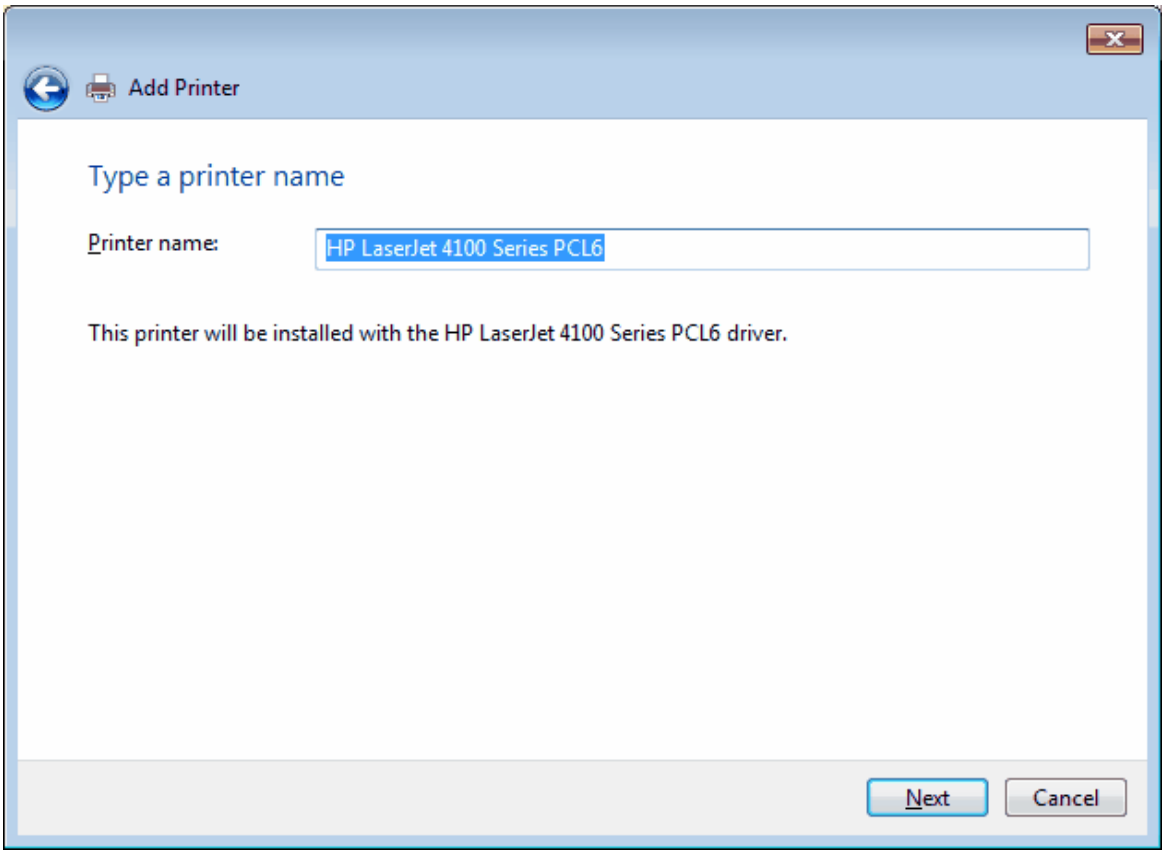
Now the avalable network printers are searched and will be displyed in a list box. Choose the printer from the list box.



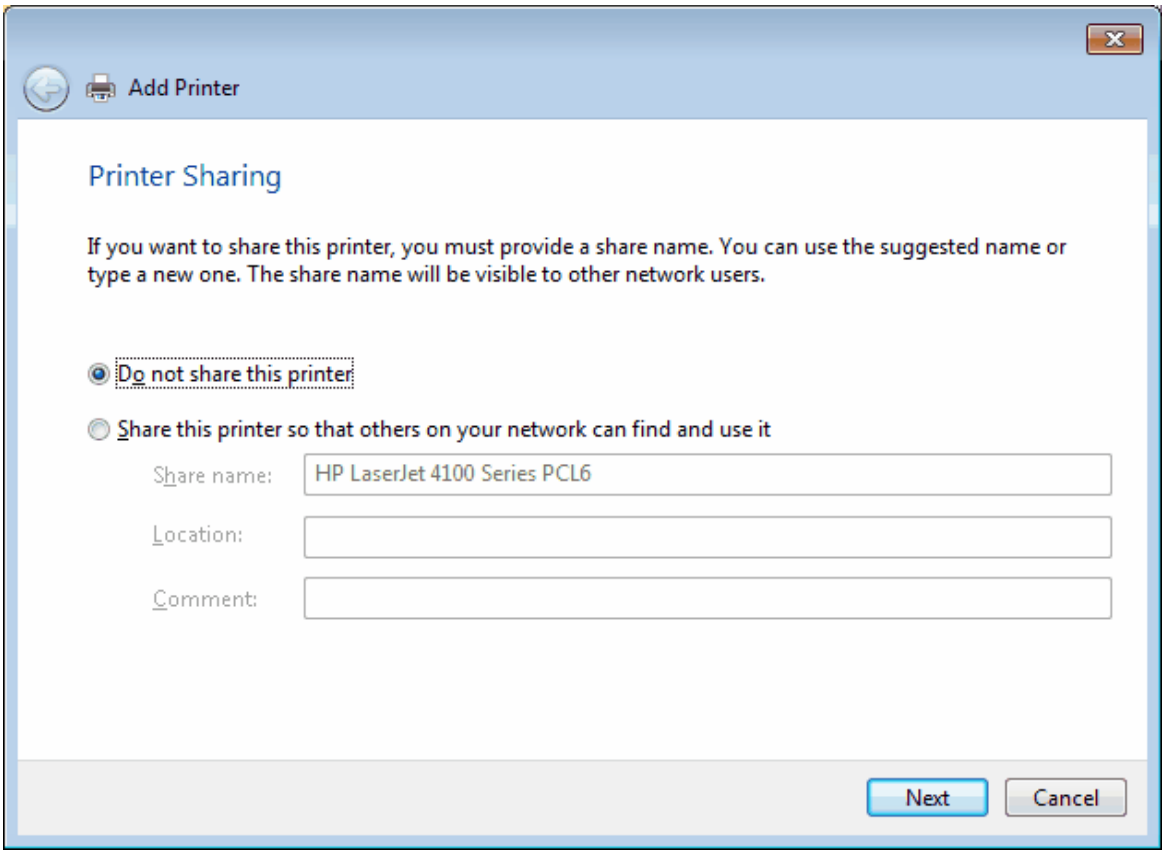
You will be asked to install a driver. Choose the corresponding driver.



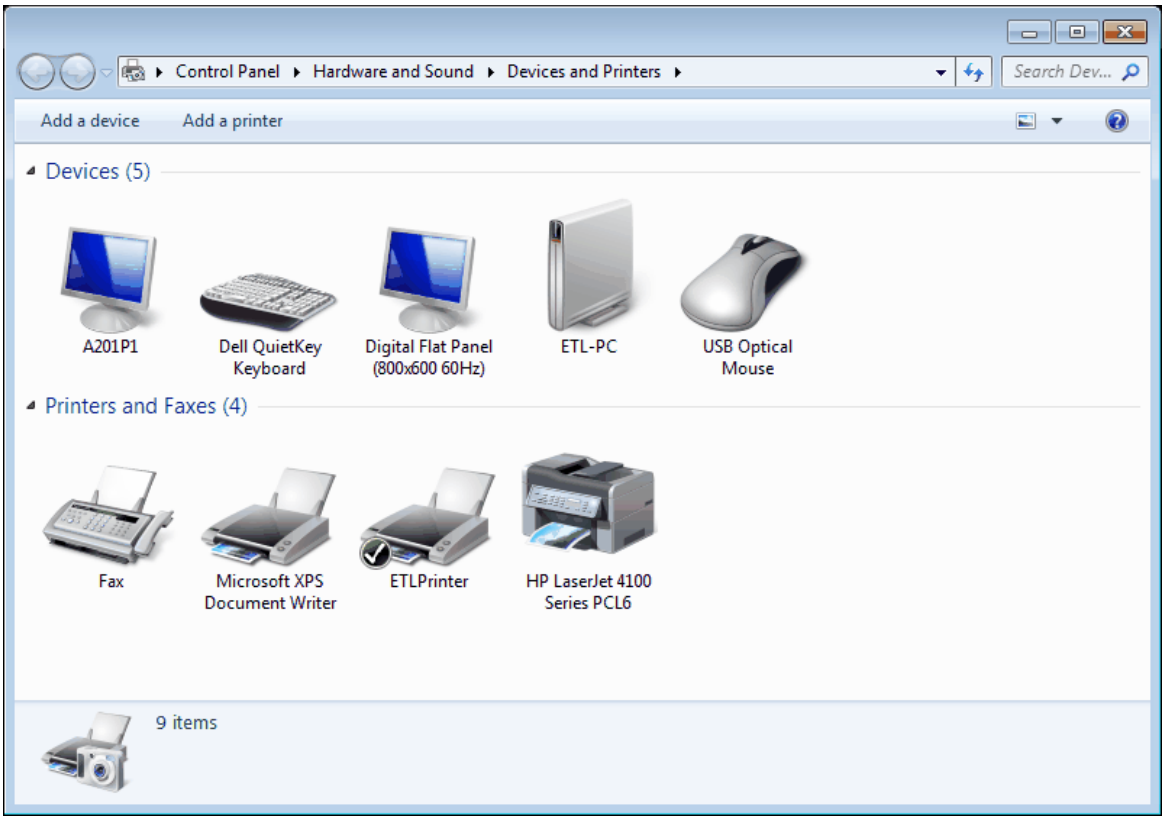
After the installation of the printer driver you can enter a name for the printer.



Do not share the printer.



After that dialog the printer will be diplayed in the list of the local printers.

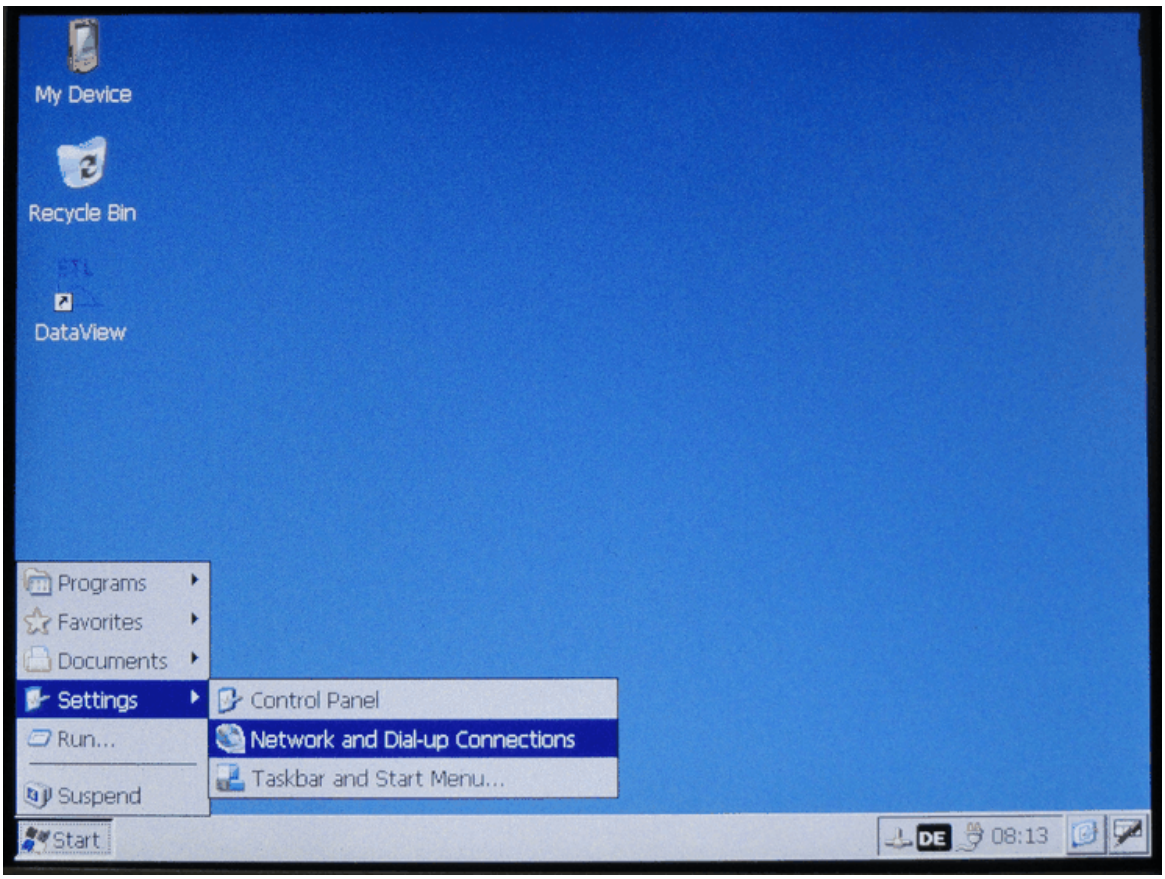


2.1.5.2 Variants X4 oder X5

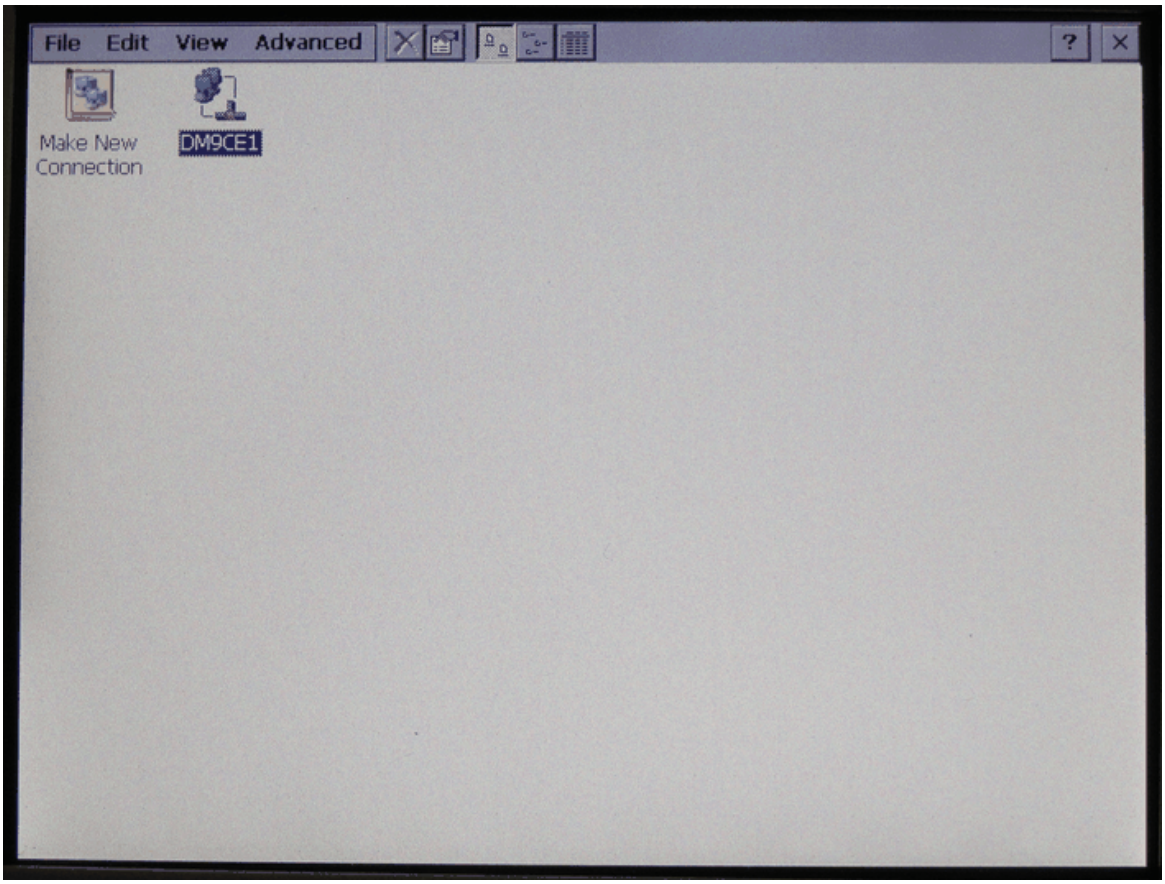
2.1.5.2.1 Network setup

After powering on the system end **ETL DataView 3** using the buttons **Workstation**, **Exit Dataview** and close the opening dialog with **Yes**.

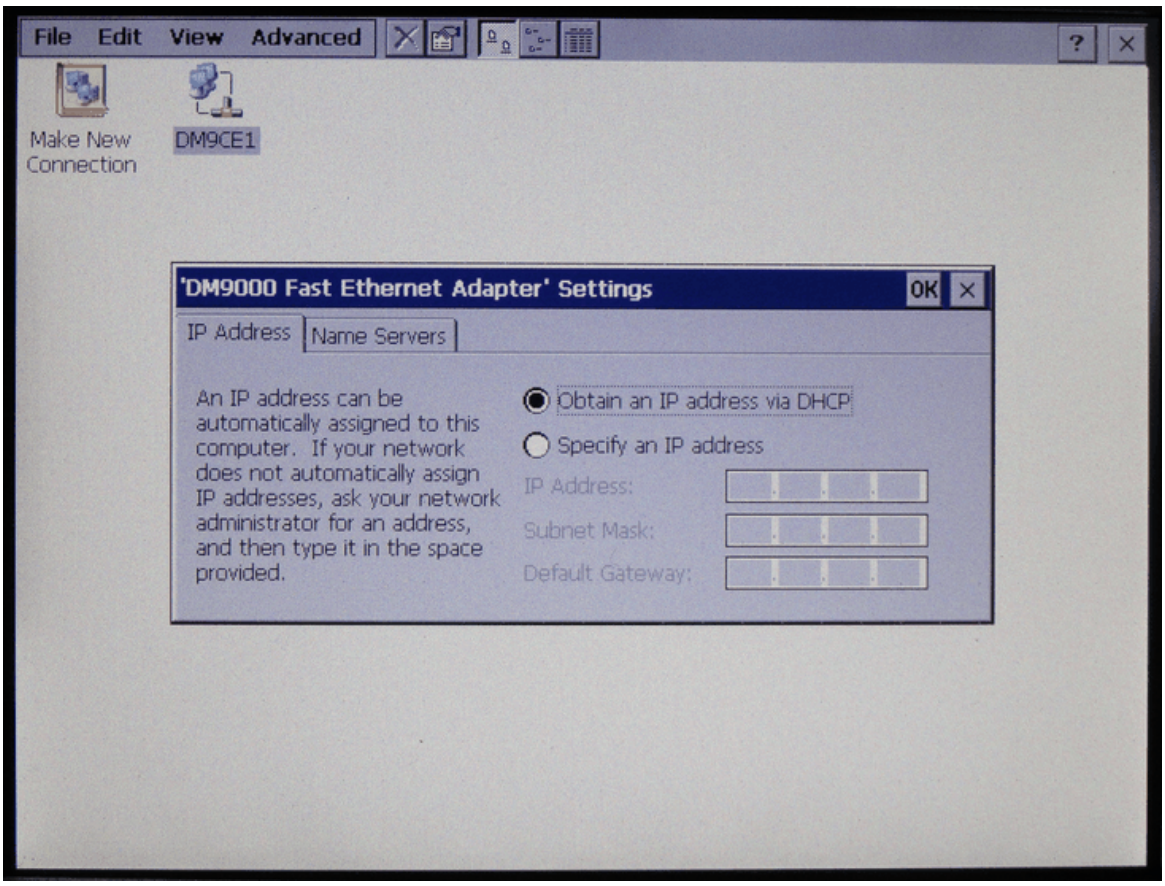
Chosse from start menu **Settings** -> **Network and Dial-up Connections**.



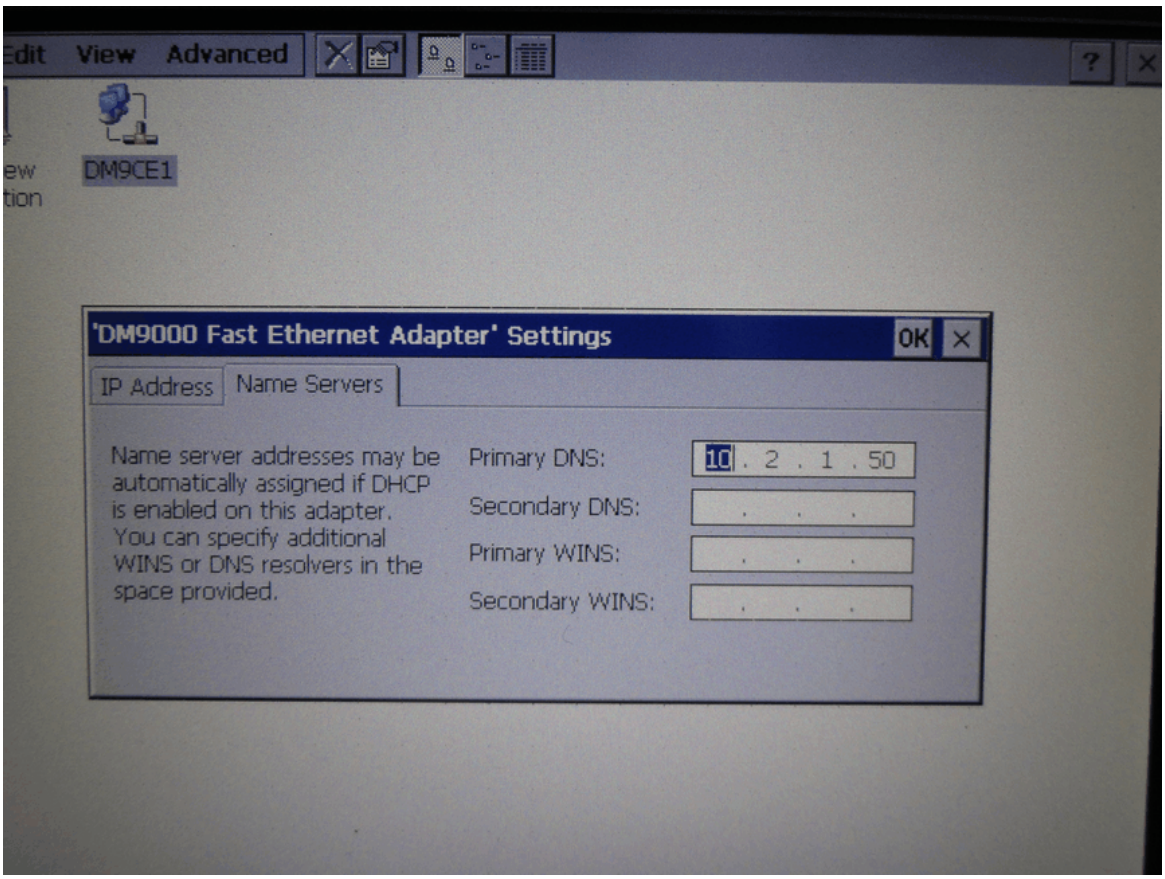
Then chosse the network adapter and open it with a double click.



In the opening dialog enter the desired settings. On the property page **IP Address** you choose using a DHCP-server or a fix IP address.



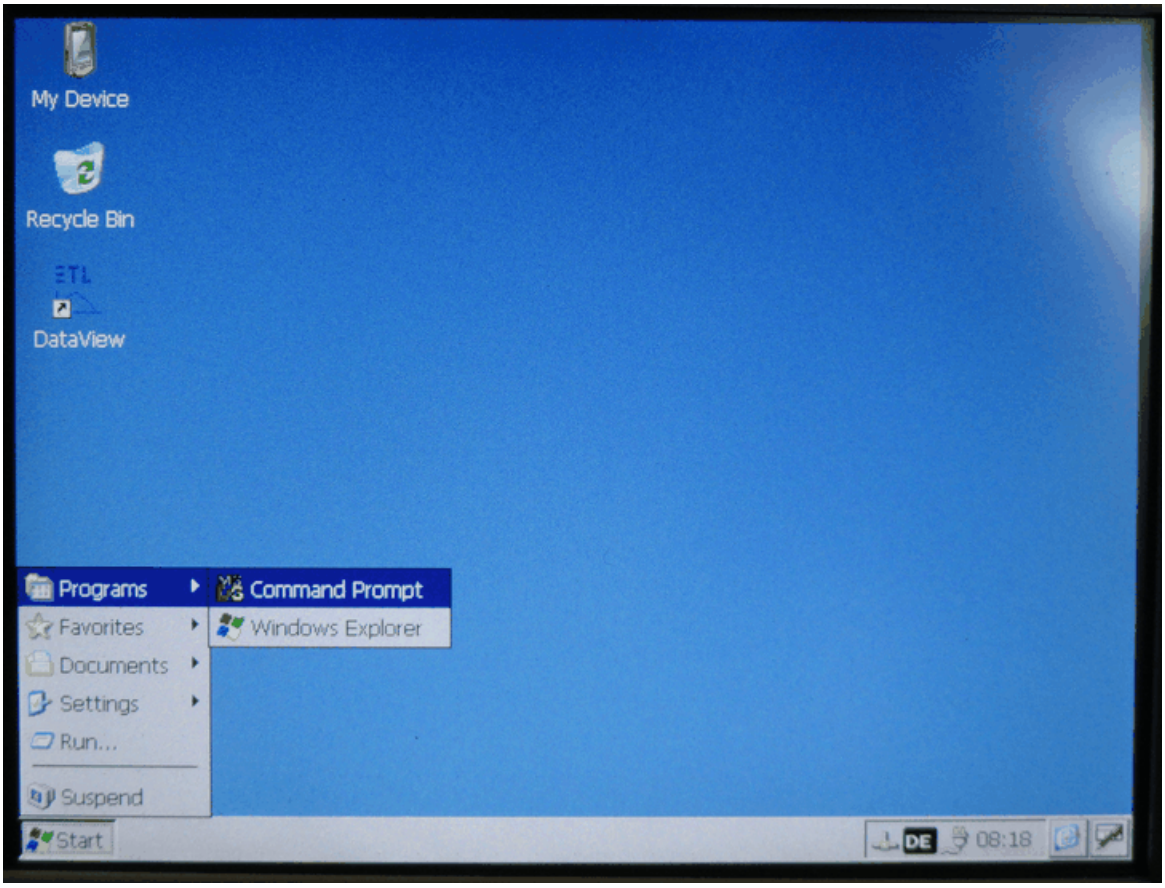
If you are using a fix IP address you must supply the address of the name server on the property page **Name Servers**.



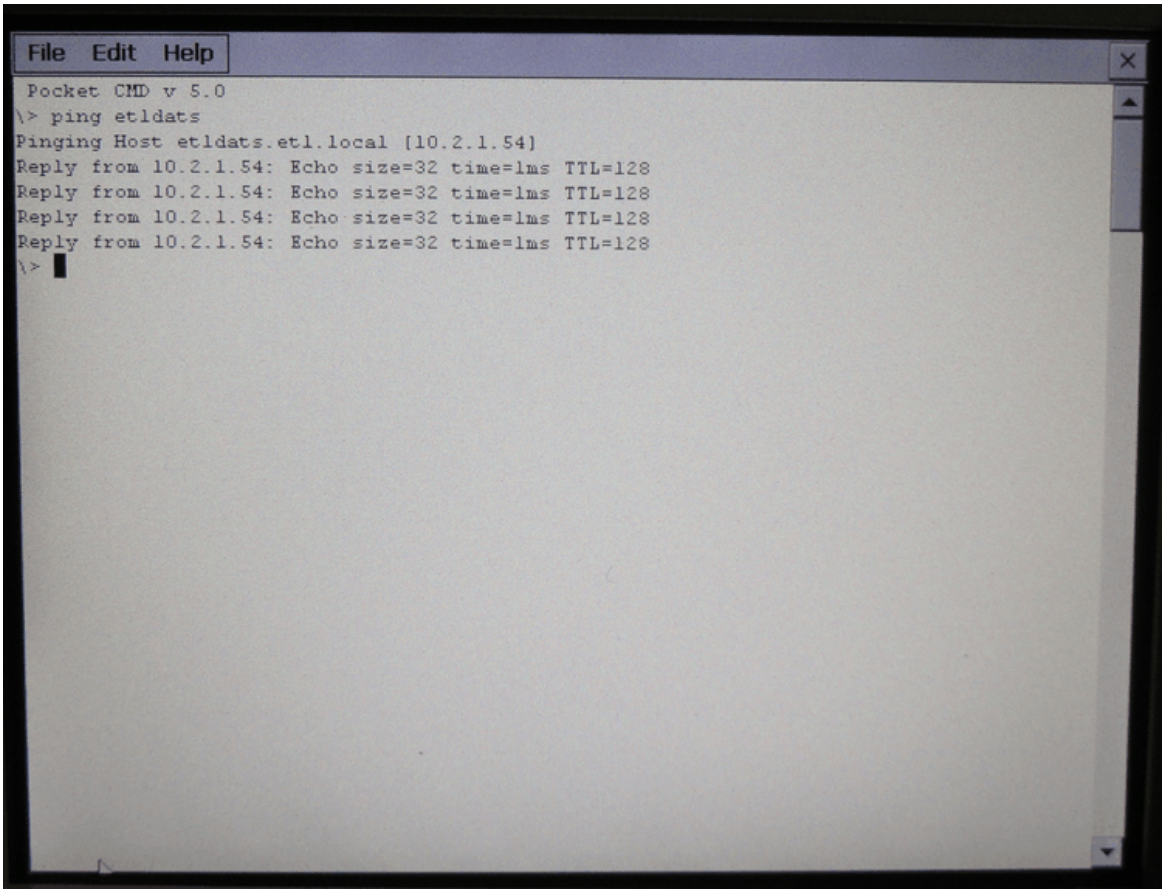
Close the dialog using button **OK**.

2.1.5.2.2 Checking the network connection

Next you will check if the host can be reached over the network. For that the **ATS400** must be connected with the network. You need to open a `Command Prompt` window.



In the opening windows enter *ping <hostname>*. Replace *<hostname>* with the name of the host you will connect, in the example *etldats*. If there is a connection the answer is like displyed below.



There are two errors which can occur.

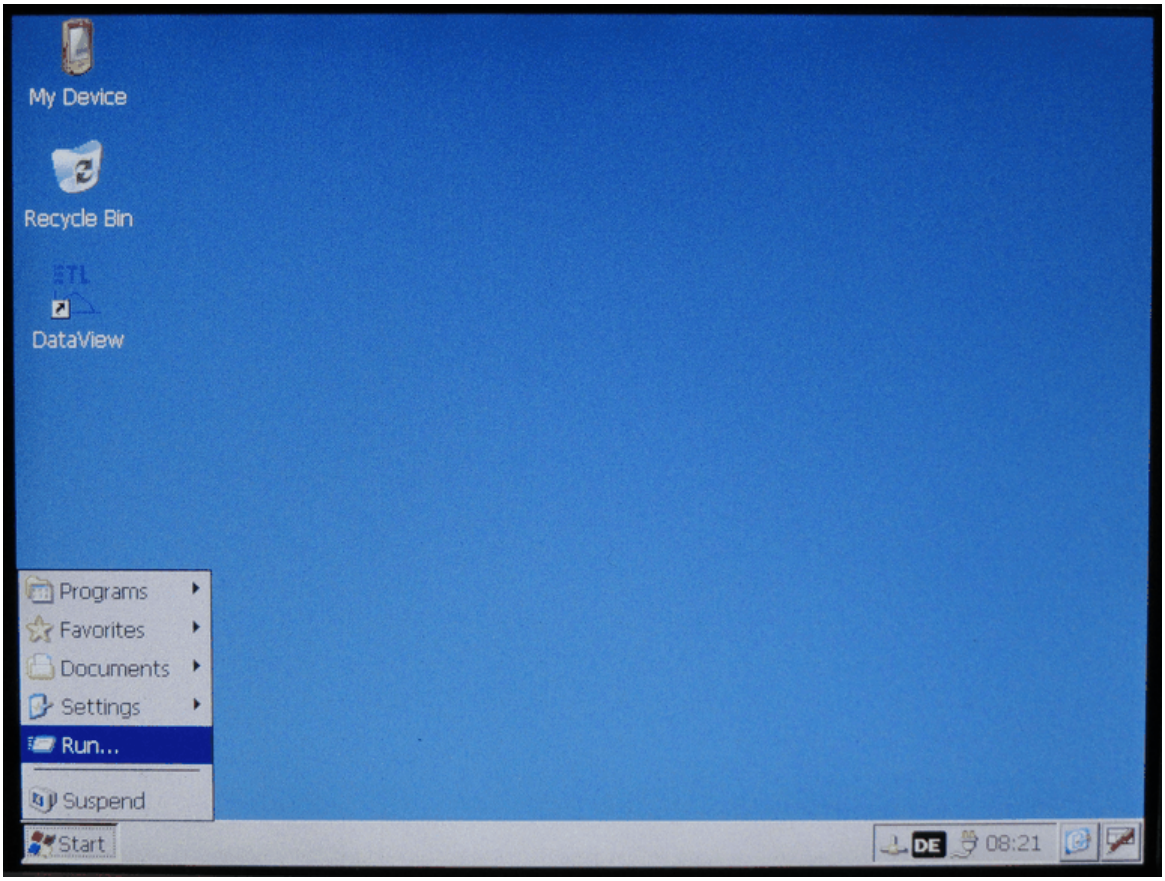
First ping cannot resolve the name of the host. In this case you get a message that the host could not be reached.

Second there is no connection. In this case data pakets are lost. In both cases contact your network admninistrator.

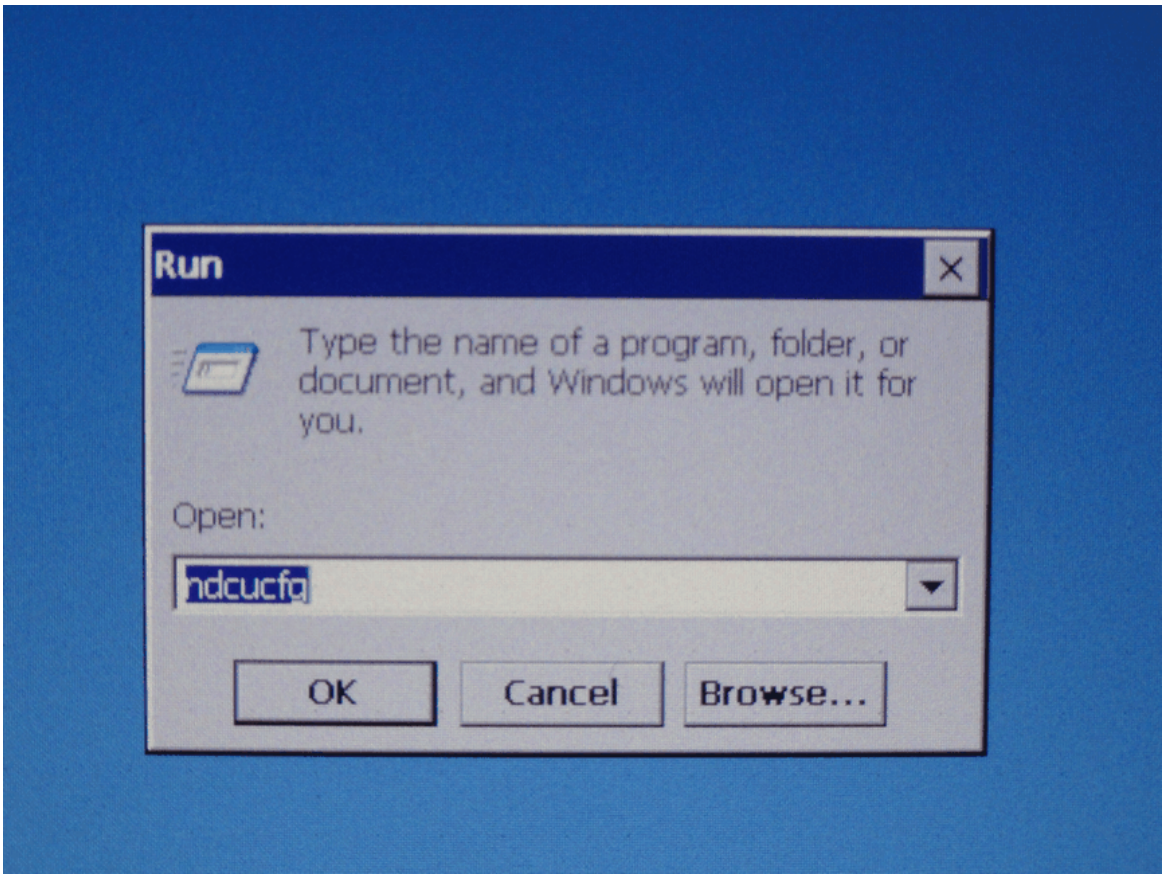
Close the window entering *Exit*.

2.1.5.2.3 Saving the settings

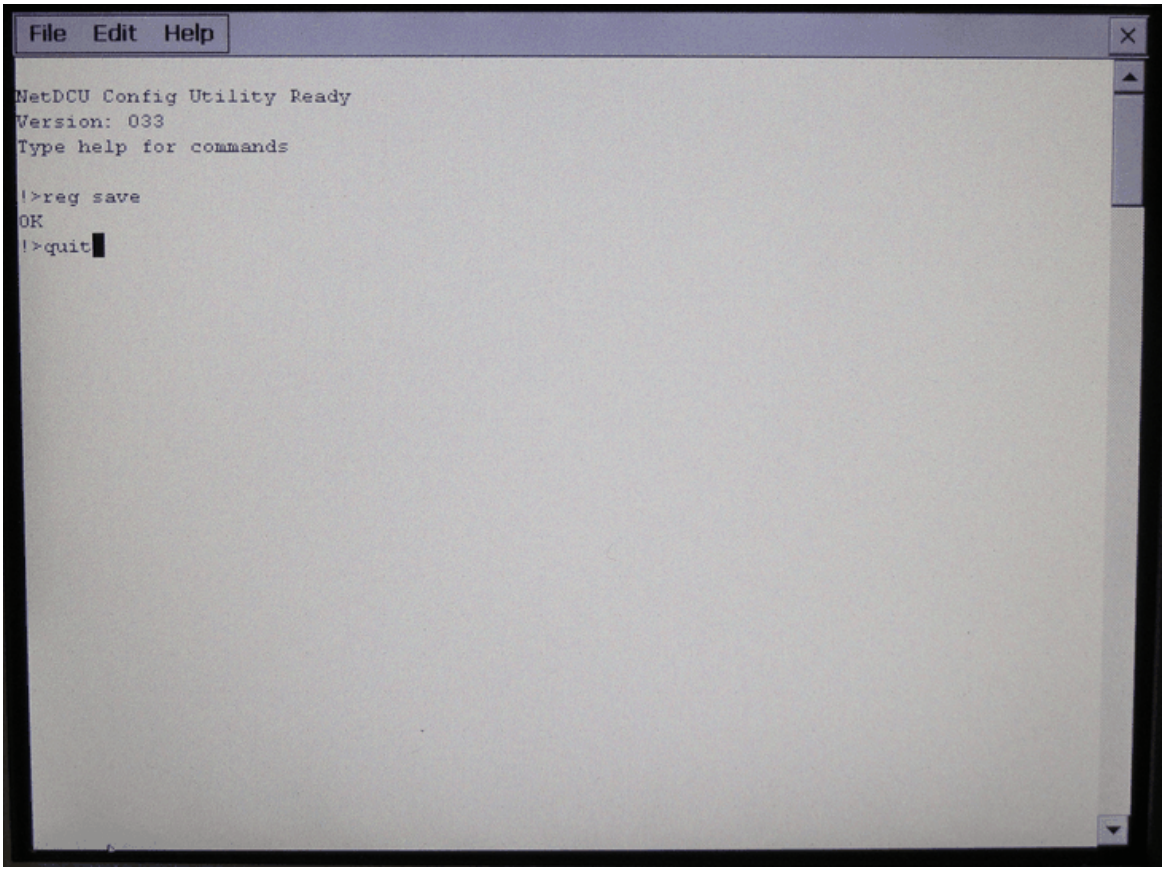
The settings are not persistant and must be saved. Open the **Run...** dialog.



In **Run** dialog enter *ndcucfg* and press the Enter key.



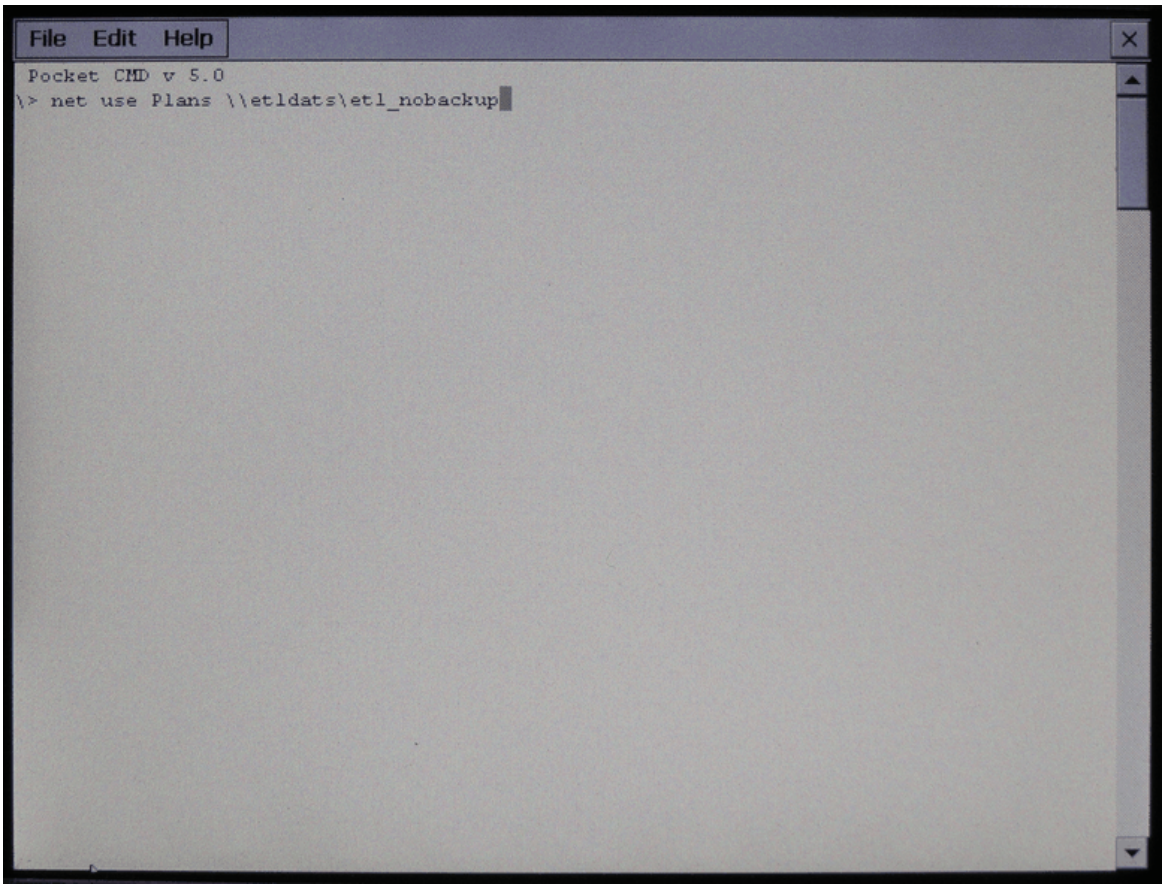
A new window will open. Enter *reg save* into the window and press the Enter key. Close the window entering *quit*.



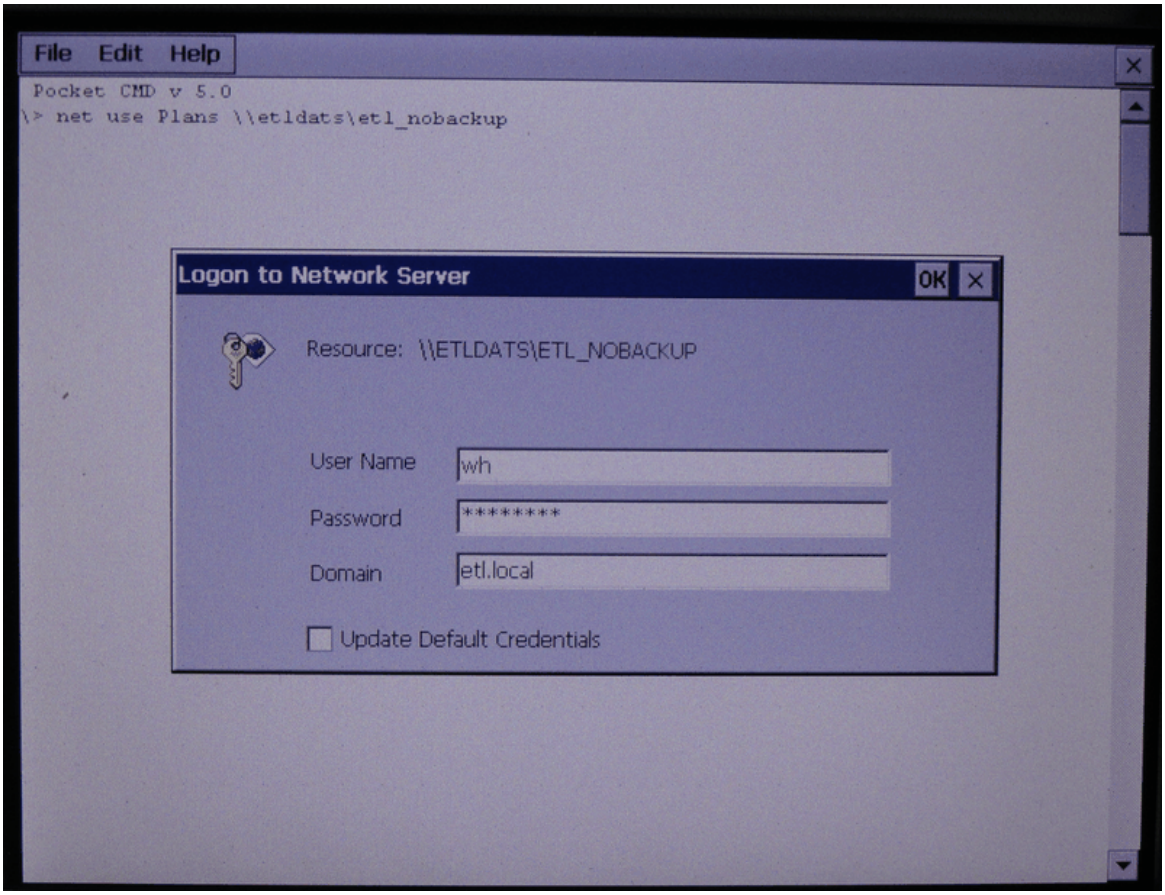
2.1.5.2.4 Checking the share

The share can now be checked. You must open **Command Prompt** again as described above.

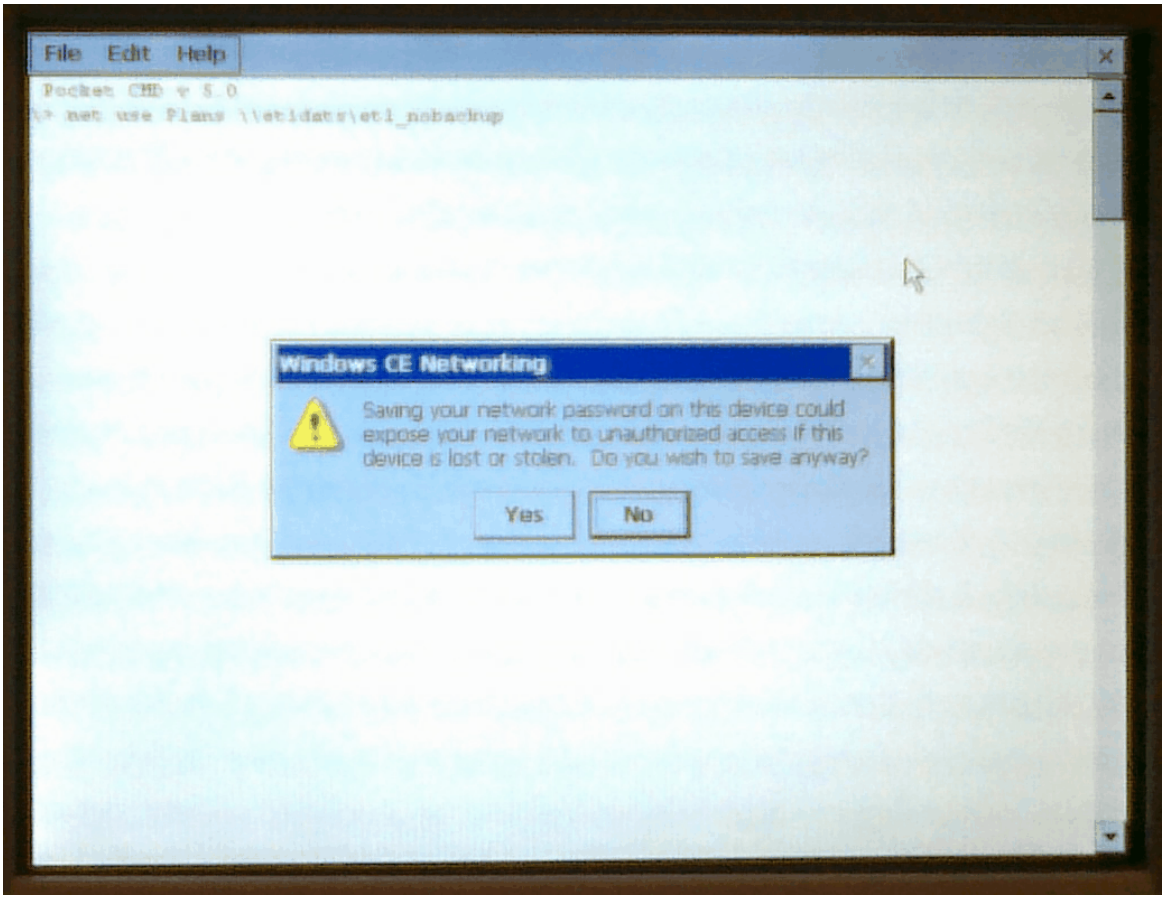
Enter into the window *net use Plans* \\<*Hostname*>\<*share name*>. Replace <*Hostname*> with the name of the host, in the example *etldats*, and <*Share name*> with the share name for test plans in the example *etl_nobackup*.


File Edit Help
Pocket CMD v 5.0
\> net use Plans \\etldats\etl_nobackup

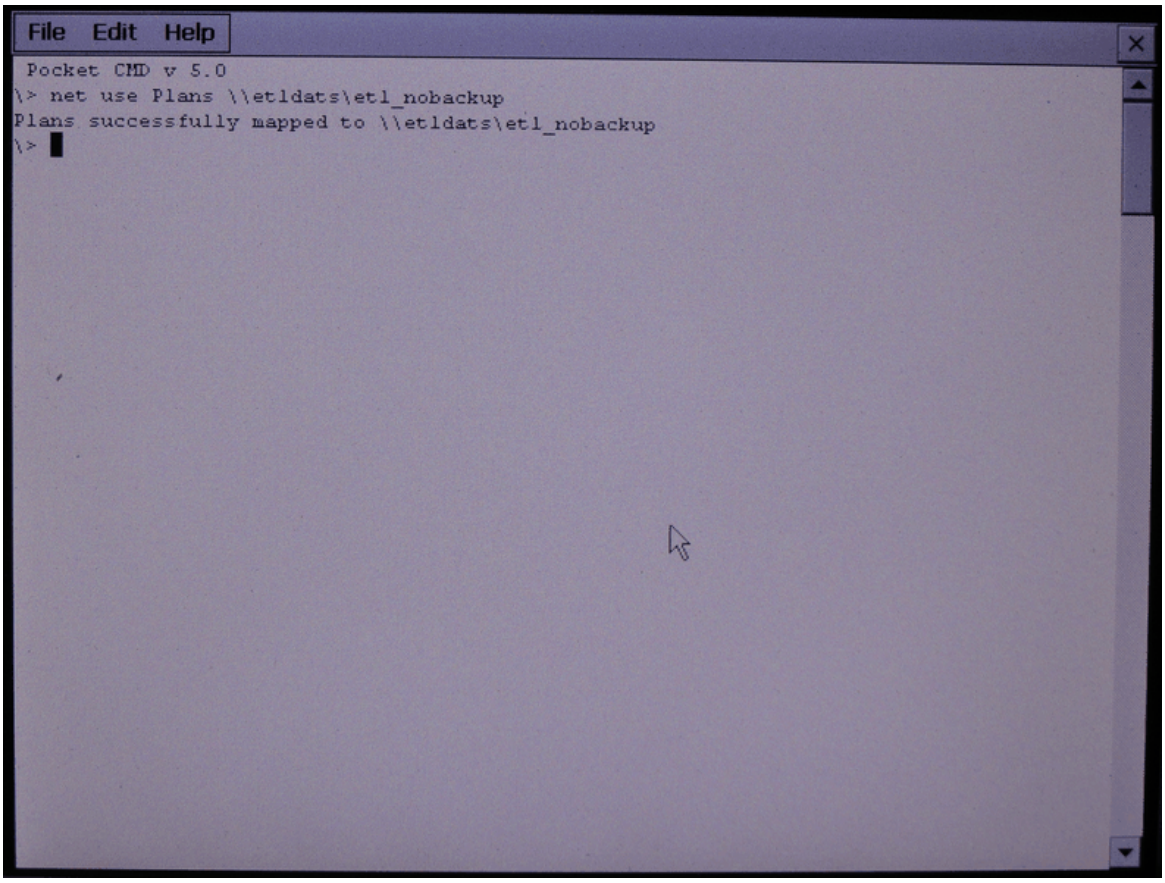
The dialog with the account data for logon will be opened. Enter user name, password and domain.



Next you will be asked if you want the data to be stored. If you store the data you will never be asked again for the logon data.

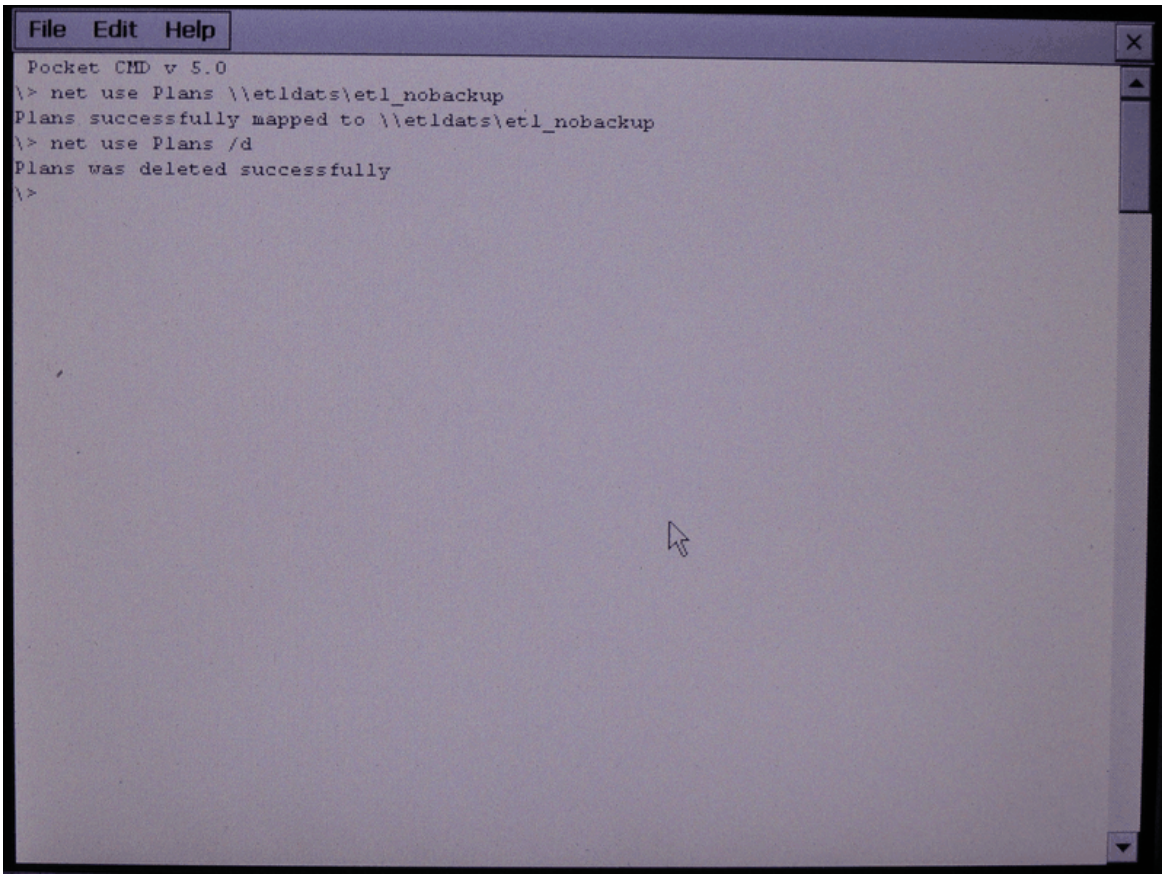


The successfully mapping wil be displayed.



If you get the message **`Command failed: status 53`** the share can not be used. Contact in this case your network administrator.

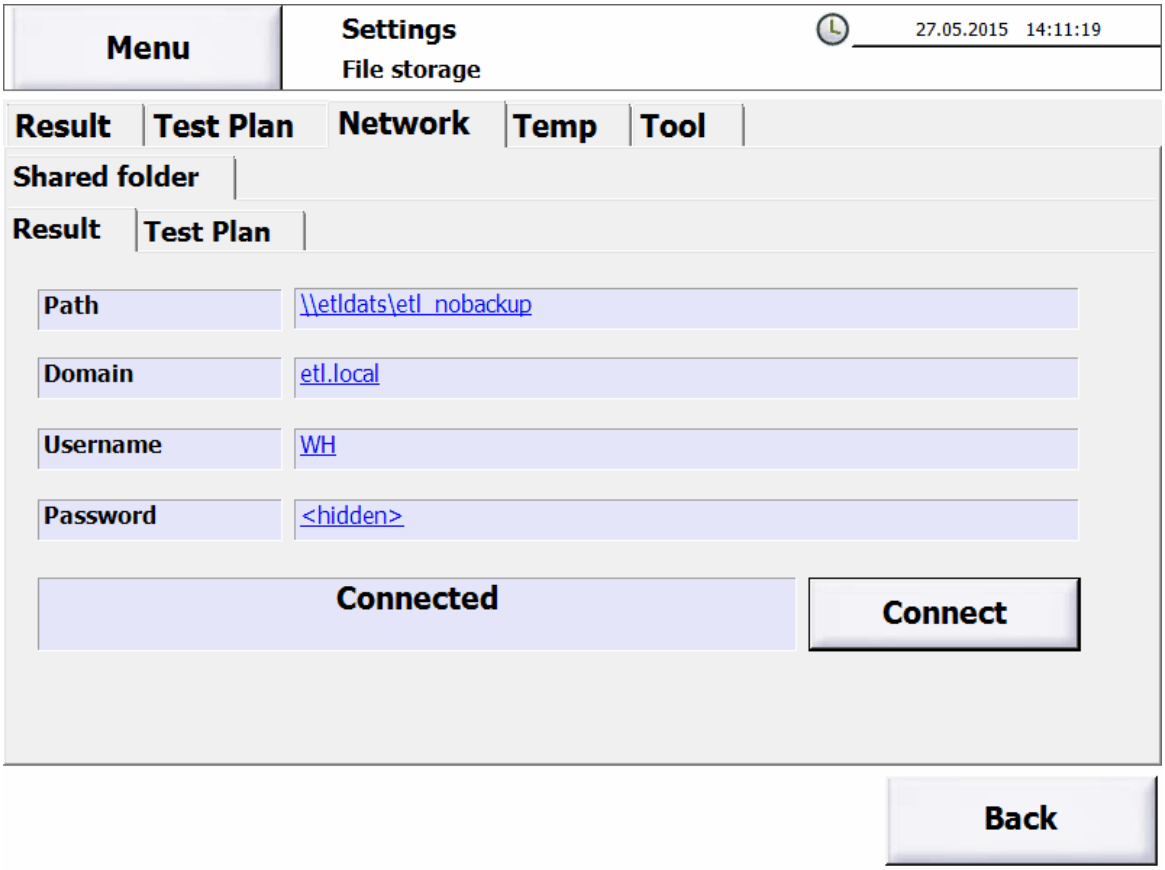
Delete the mapping with *net use Plans /d*.



Close the window with *exit*.

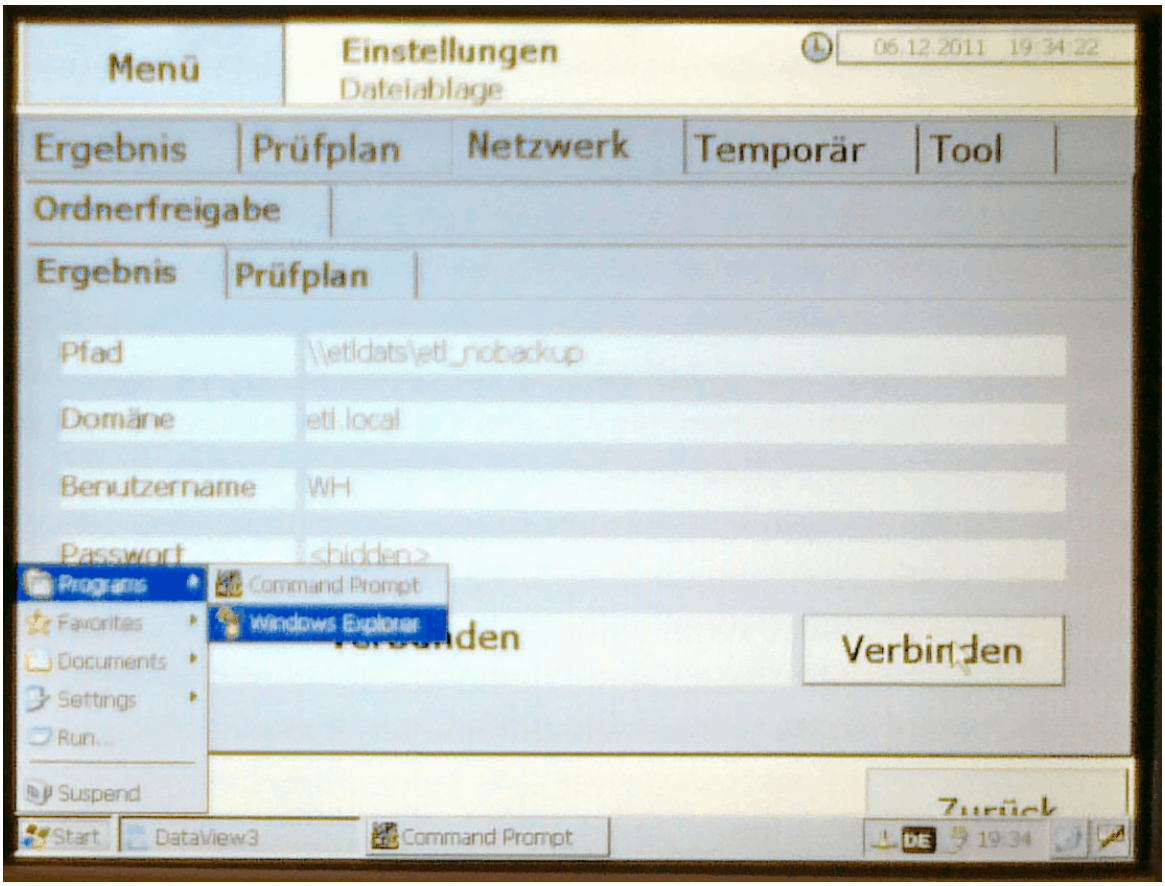
2.1.5.2.5 Configuration

So **ETL DataView 3** can connect with the host it needs the corresponding information. Enter these in **Settings** -> **File storage** in the property pages **Network** -> **Shared folder** -> **Result** rsp. **Test plan**.

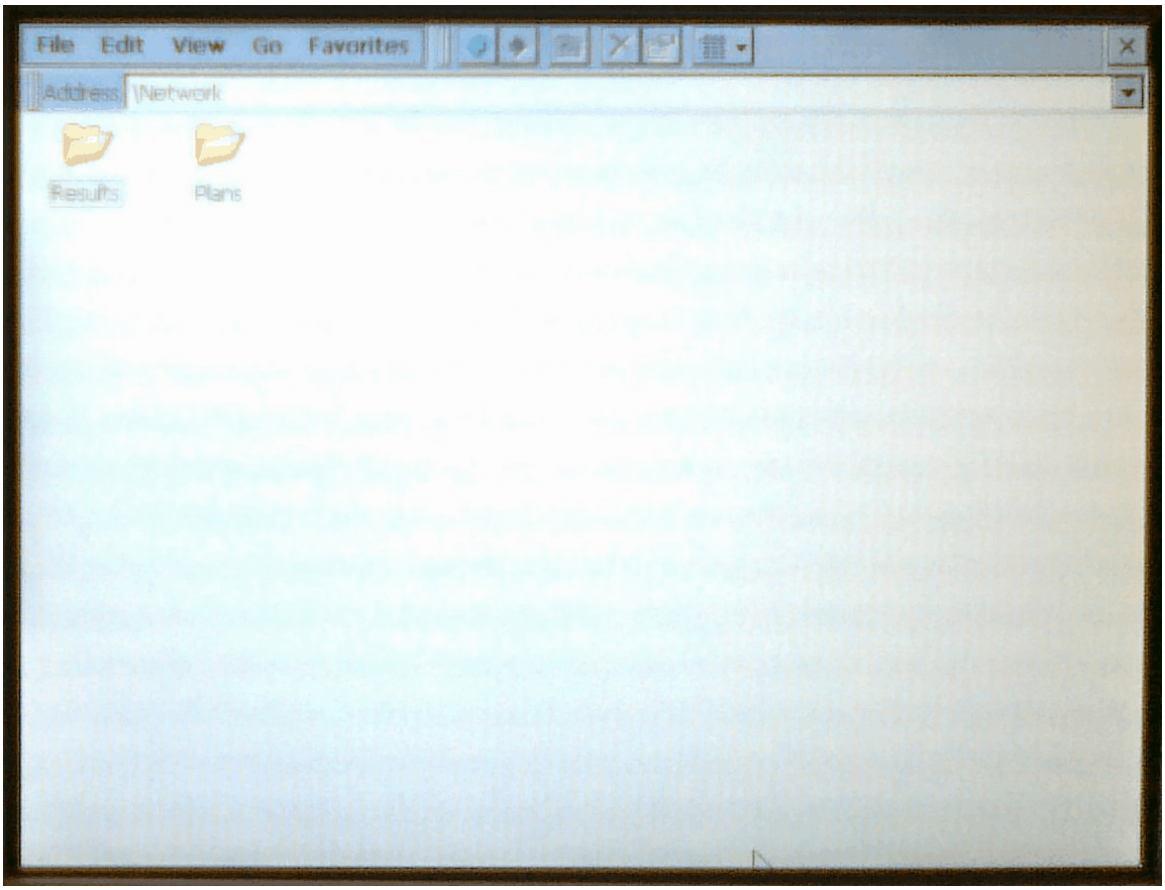


After entering the data you can establish a connection clicking on button **Connect**. If the connection is successfull the text changes from **Not connected** to **Connected**.

You can check a succefull connection by opening **Windows Explorer**.



In **Windows Explorer** click on the icon **Network**. The mappe dfolders will be displayed.

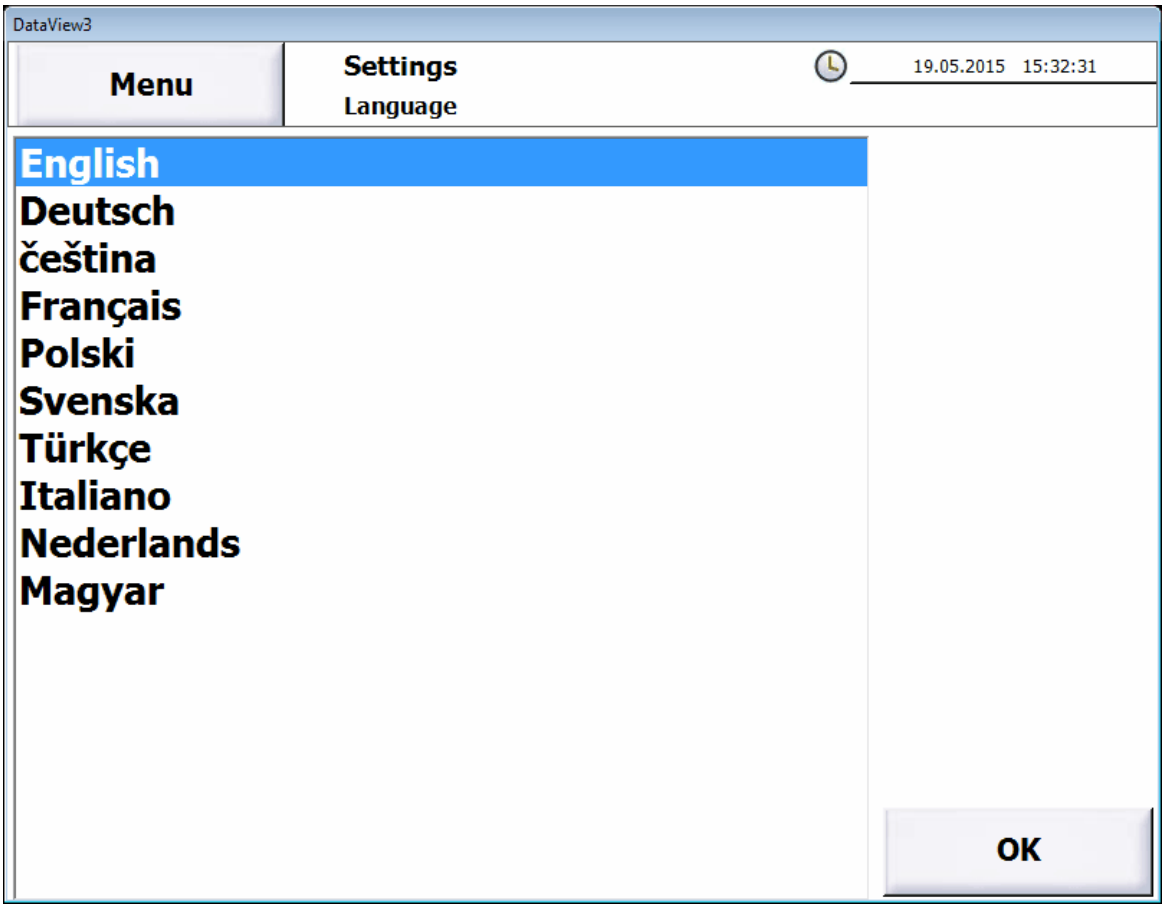


2.2 Configuration

This chapter covers work to be done for configuring **ETL DataView 3**.

2.2.1 Setting up language

Open the dialog choosing **Settings** -> **Language**.

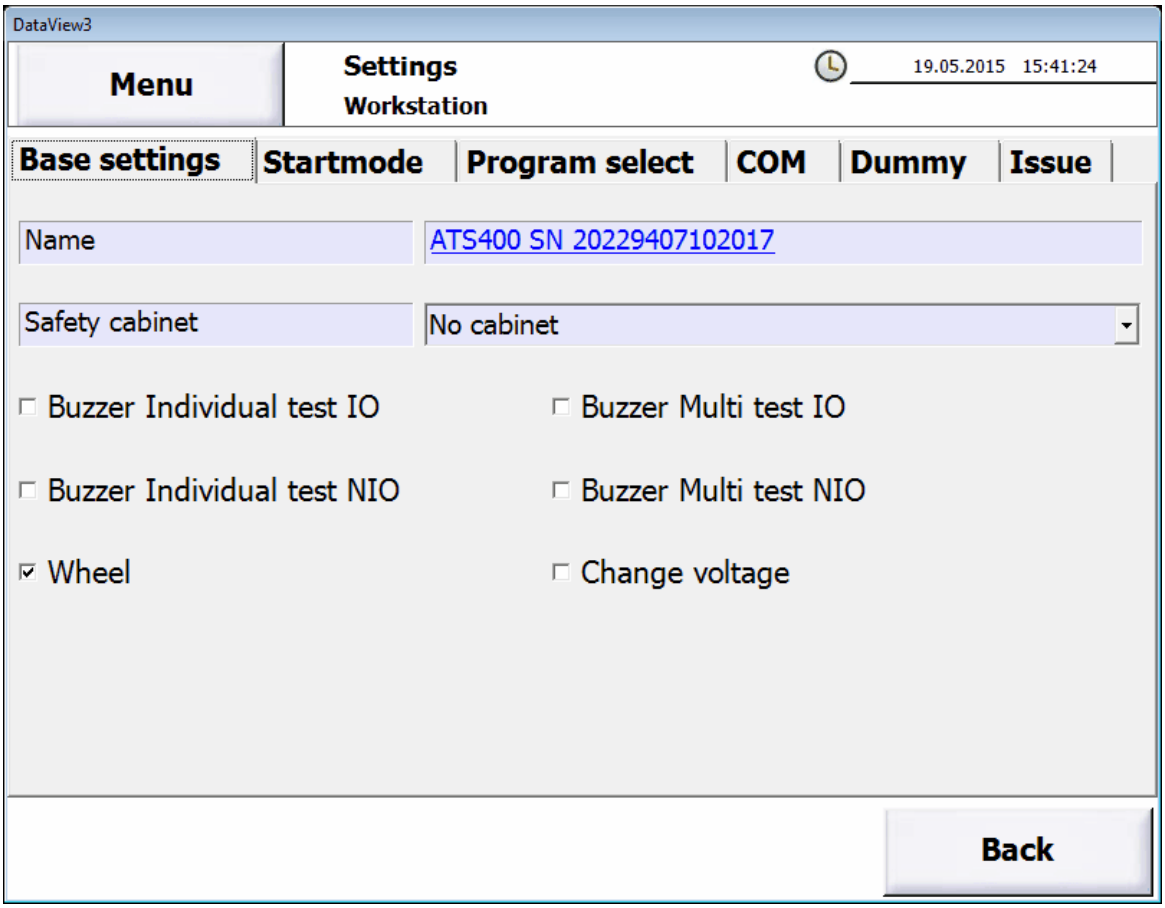


Select in the list the desired language. Click on button **OK** to apply the language. This setting will be stored in file **Settings.conf**. The language will be active immediately for most of the dialogs. The dialog will be closed and the window **Settings** will be displayed again.

With a click on the button **Menu** the change will be lost. The dialog will be closed and the window **Mainmenu** will be displayed again.

2.2.2 Naming the workstation

Open the dialog choosing **Settings** -> **Workstation** -> **Base settings**.



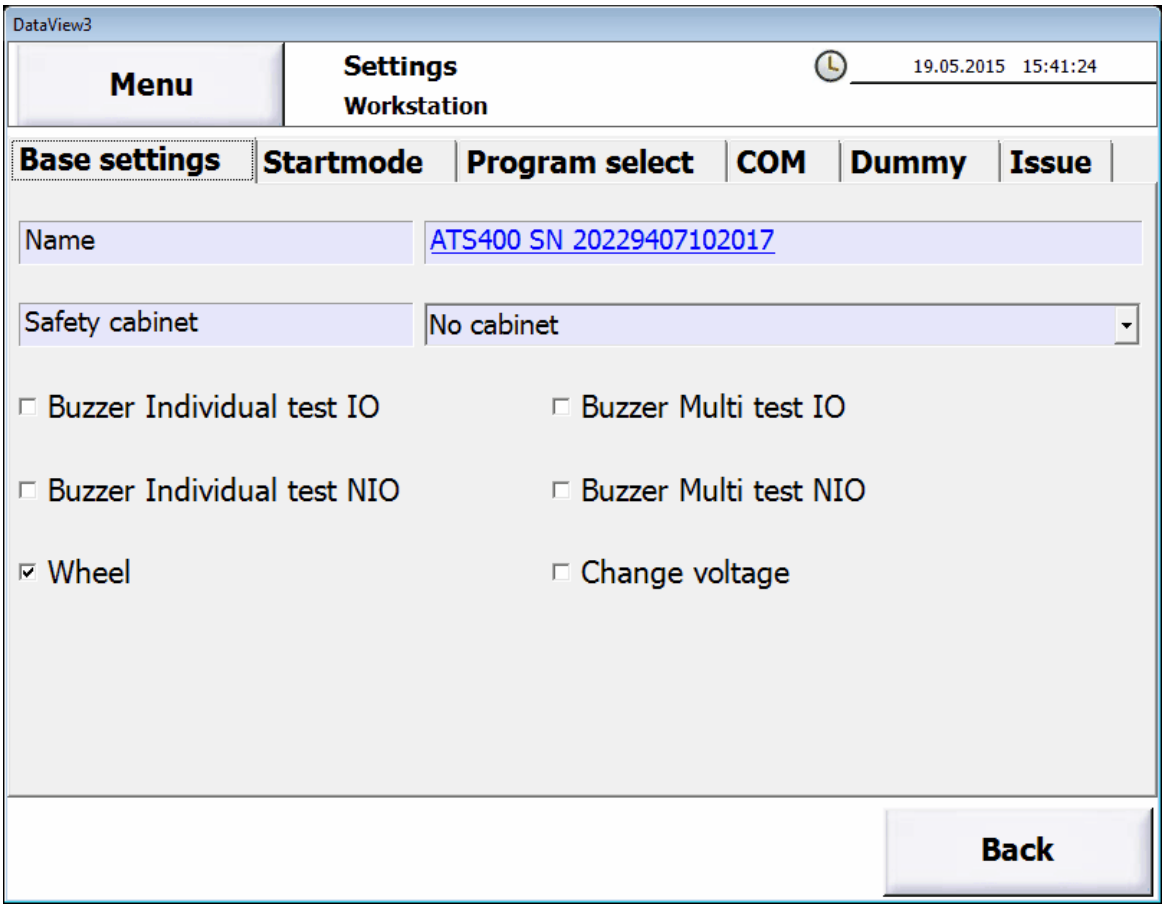
Click into the field right of **Name**. A keyboard window will be opened. Enter the name of the workstation. Click on one of the buttons **Back** or **Menu**. The settings will be stored in the file **Settings.conf**.

When creating reports you can access the field with the keyword **WORKSTATION**.

2.2.3 Signal tones

Additional to the signal tones generated for the overall result also signal tones can be given for each test step. The duration of the tone is according to the setting for the overall result.

Open the dialog choosing **Settings** -> **Workstation** -> **Base settings**.



These setting is done by the 4 top checkboxes. Click on one of the buttons **Back** or **Menu**. The settings will be stored in the file **Settings.conf**.

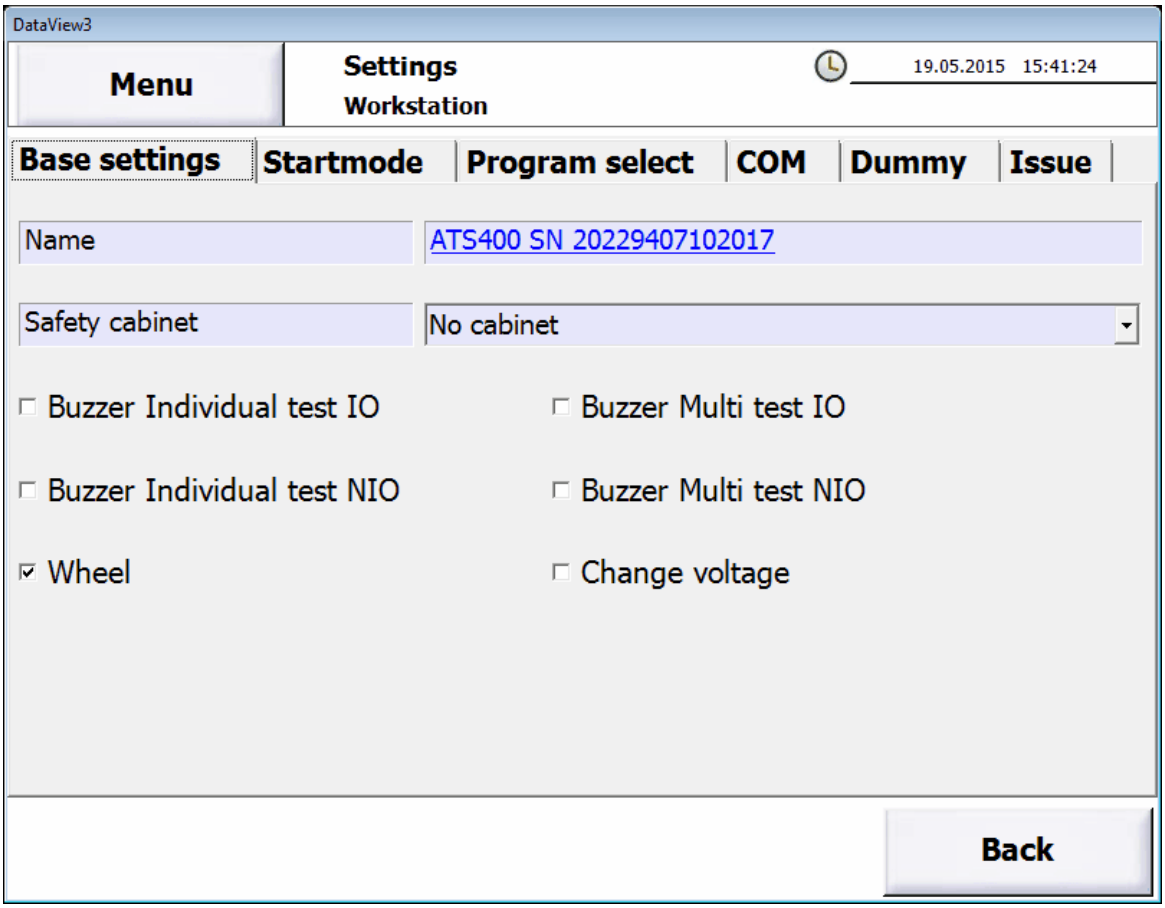
Selection	Behaviour
Buzzer Individual test IO	Is the result of a test step IO a signal tone is generated. This is independent from the fact of the test step is part of a multi test step or not.
Buzzer Individual test NIO	Is the result of a test step NIO a signal tone is generated. This is independent from the fact of the test step is part of a multi test step or not.
Buzzer Multi testIO	Is the result of a test step IO a signal tone is generated. This is done only when the test step is part of a multi test step.
Buzzer Multi test NIO	Is the result of a test step NIO a signal tone is generated. This is done only when the test step is part of a multi test step.

2.2.4 Safety cabinet

When using a safety cabinet you can choose several settings. To use this settings it is neccessary to use a safety cabinet support the signals **IN OP** and **Locking** on the **ETL-Interfaces** of the **ATS400**.

This setting applies to the workstation and is valid for all test plans.

Open the dialog choosing **Settings** -> **Workstation** -> **Base settings**.



Choose a value from the list **Safety cabinet**. This will change the behaviour of the signal **Out 6** on the **ETL-Interface**. Click on one of the buttons **Back** or **Menu**. The settings will be stored in the file **Settings.conf**.

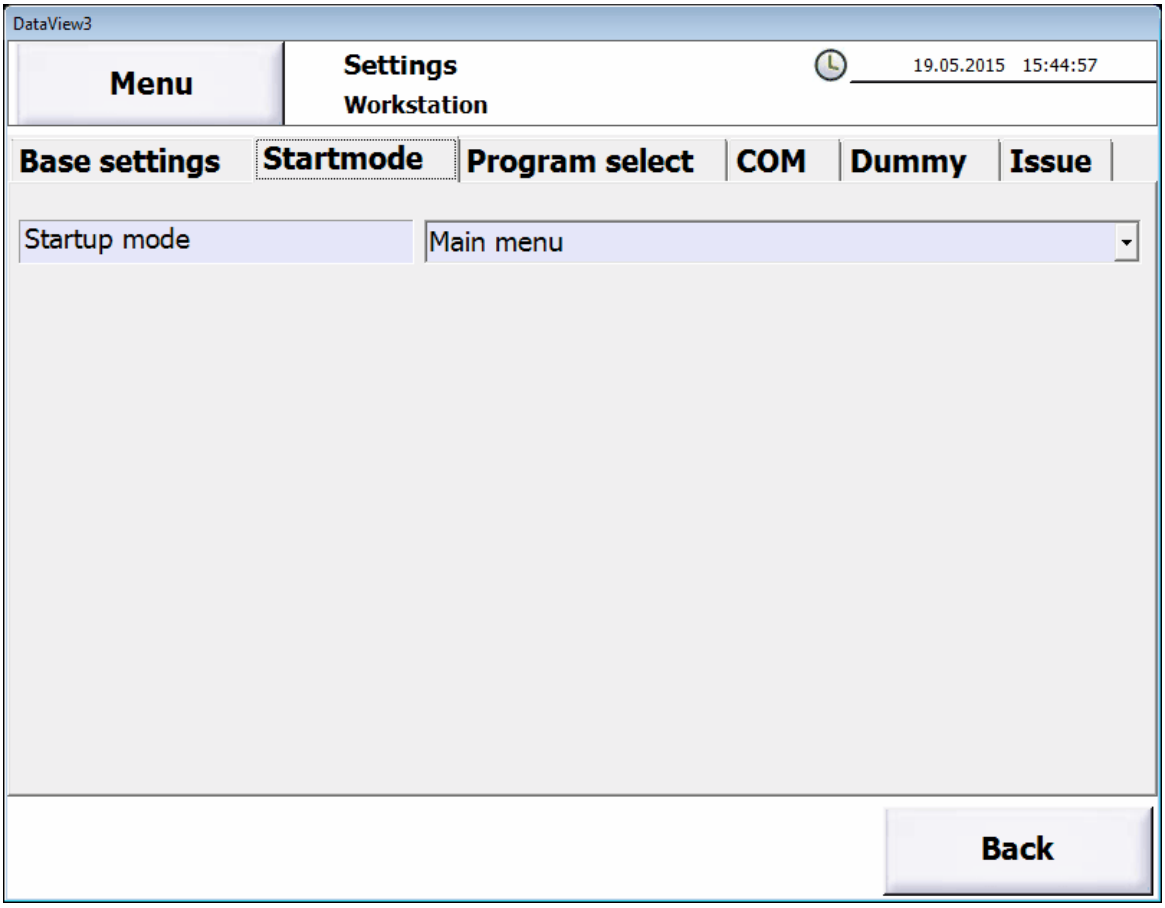
Selection	Behaviour
No cabinet	The signal has the meaning **READY FOR OPERATION** and behaves as described in the base device manual in chapter **ETL-Interface for Selection and Operation Panels**.
Locked during plan	The signal has the meaning **Locking**. The safety cabinet will not open as long as a

Selection	Behaviour
	test is running. After the test the safety cabinet can be opened independent from the overall result of the test.
`Unlock on pass`	The signal has the meaning `Locking`. The safety cabinet can not be opened as long as the overall result is not passed. Will the safety cabinet stay locked a message is displayed. You can unlock the safety cabinet with a button on the screen or the signal `Button Stop` on the `ETL-Interface`.

2.2.5 Startmode

You can define which window will be displayed after starting **ETL DataView 3**.

Open the dialog choosing `Settings` -> `Worksation` -> `Startmode`.



Dependend from the selection in `Startup mode` additional controls may be displayed. These are labeld as `Individual Test` or as `Plan`.

Selection	Behaviour
Main menu	The main menu will be displayed.
Select plan by ID	The window **Select ID** will be displayed.
Start in batch mode	The window **Test batch** will be displayed.
Select plan manually	The window **Select manual** will be displayed.
Individual test	Additionally the selection **Individual Test** will be displayed. You can select which test type will be started. You can only select enabled test types. The test will be started immediatelly after the start.
Menu individual test	The window **Test individual** will be displayed.
Plan	Additionally the selection **Plan** will be displayed. You can select one of the test plans. This test plan will be running immediatelly after the start. Will the test plan be renamed or deleted you get a message and the main menu will be displayed.

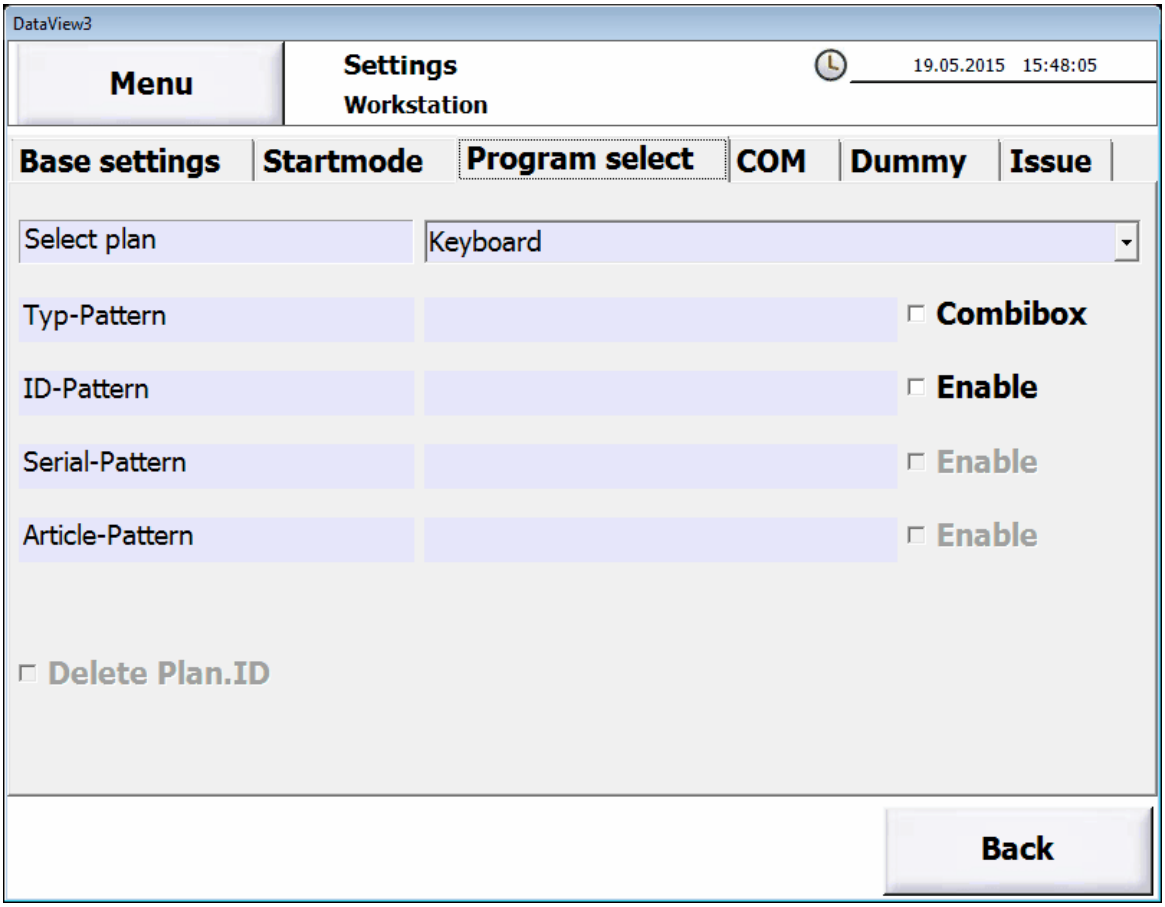
Important

Having user administration active all user should have the right to use the window configured as start up window.

2.2.6 Test plan selection

You can determine how to enter data during automatic test plan selection.

Open the dialog choosing **Settings** -> **Workstation** -> **Program select**.



Dependend from the selection in **Select plan** are the controls operational.

With the drop down box **Select plan** you can choose from which source the selection will be taken.

Choosing **ETL-Interface** the test plan will be selected by applying a number at the ETL-Interface and active the acquisition. Details are described in the base device manual.
Choosing **Keyboard** a window will be displayed. Into this window a ID will be entered which is used to select the test plan.
Choosing **File Plan.ID** a file with the name **Plan.ID** must be created in the plans folder. This file contains a line with the ID which is used to select a test plan. Optional in a second line a serial number and in a third line a article description can be given. The contents of the file will be periodically checked.
Using this selection the checkbox **Delete Plan.ID** is operational. Is this check box active the file will be deleted after it has been processed.

The fields **Typ-Pattern**, **ID-Pattern**, **Serial-Pattern** and **Article-Pattern** as well as the corresponding check boxes are operational if **Keyboard** is selected in **Select plan**. With the other selections the controls are disabled.

In the field **Typ-Pattern** is the pattern which is used to test the entered data using automatic test plan selection. This pattern must be meet to have a valid entered data. The entered data will be in the result file as tag **TYPE**.

The check box **Combibox** indicates that the field **Typ-Pattern** contains two parts. When **Combibox** is active the fields **ID-Pattern** and **Serial-Pattern** are getting operational, the check boxes **Enable** will both be activated and disabled.

In the field **ID-Pattern** is the pattern which will be used to extract the type from the entered data. The extracted value will be in the result file as tag **USEDID**.

The corresponding check box **Enabled** indicates that the entrance contains a type.

In the field **Serial-Pattern** is the pattern which will be used to extract a serial number. The extracted value will be in the result file as tag **SERIALNUMBER**.

The corresponding check box **Enabled** indicates that the entrance contains a serial number.

In the field **Article-Pattern** is the pattern which will be used to extract additional article data. The extracted value will be in the result file as tag **ARTICLE**.

The corresponding check box **Enabled** indicates that the entrance contains additonal article data.

Details how to enter pattern are in topic Patterns.

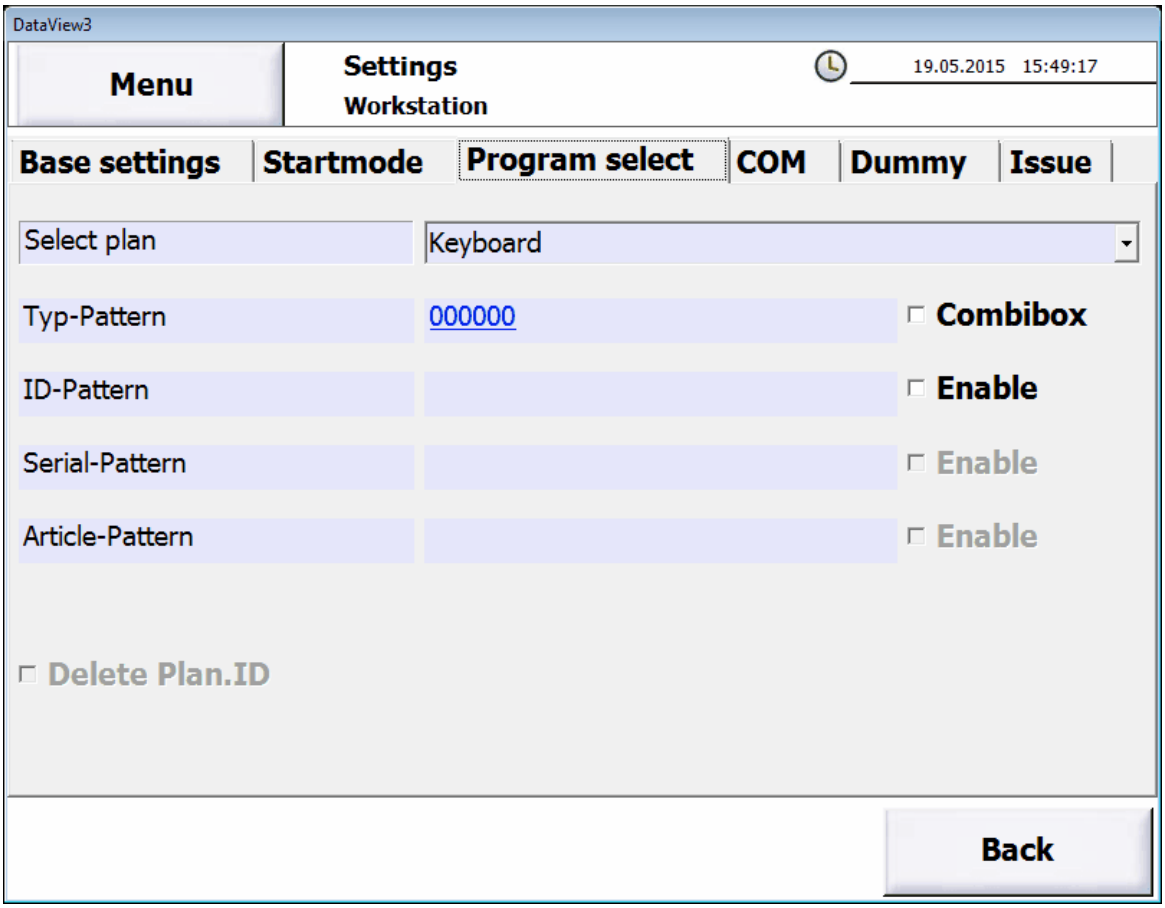
2.2.6.1 Examples

The following examples shows possible settings at hand of the number scheme used by **ETL**. This scheme consist of a article number with 6 ciphers followed by a blank and the serial number. The serial number consists of 4 ciphers for the production month a blank and 4 ciphers for a number. This leads to following pattern:
000000\ 0000\ 0000
An example number is *205589 0515 1000*. The corresponding aricle description is *UGP-5025*.

Other examples will show additional possibilities.

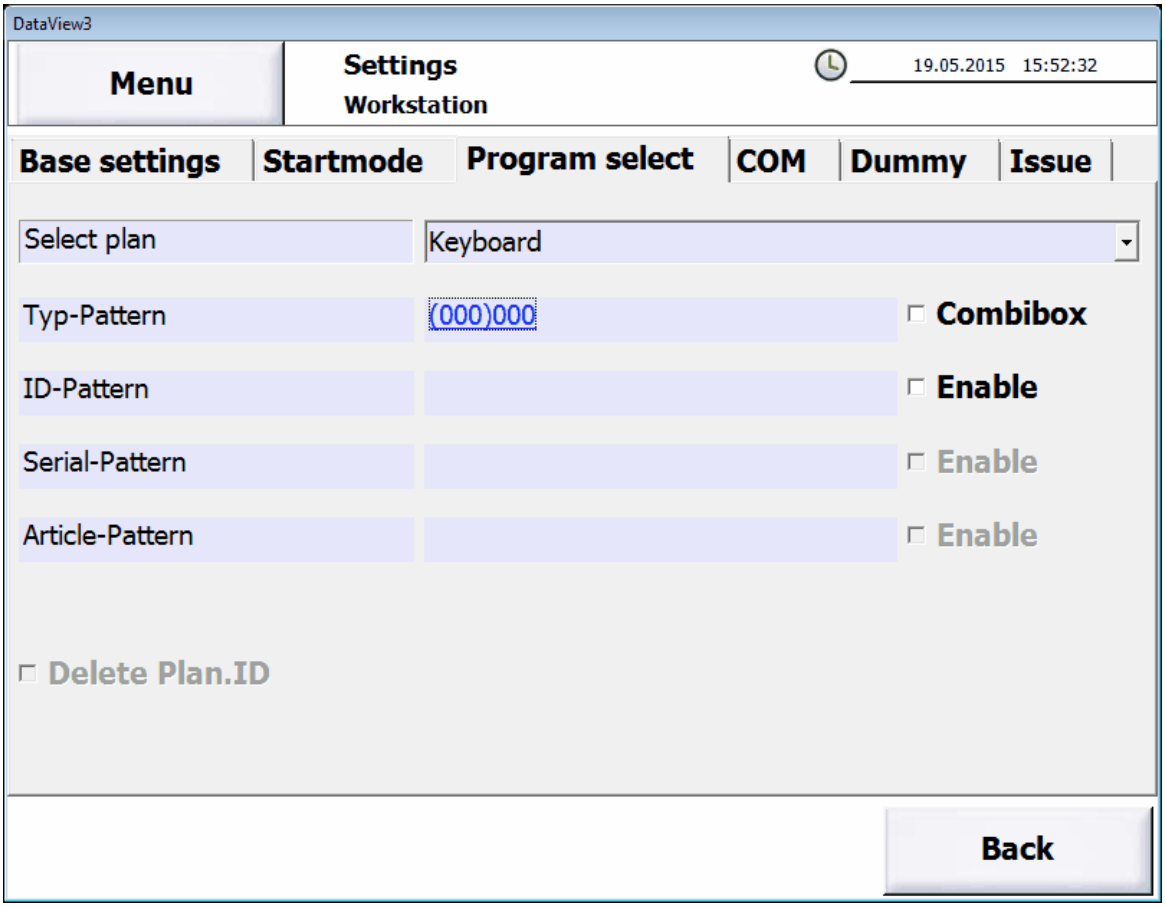
2.2.6.1.1 Article number

Should for automatic test plan selection only the article number be used the pattern has to be given in field **Typ-Pattern**. The check boxes remain inactive and the other fields remain empty.



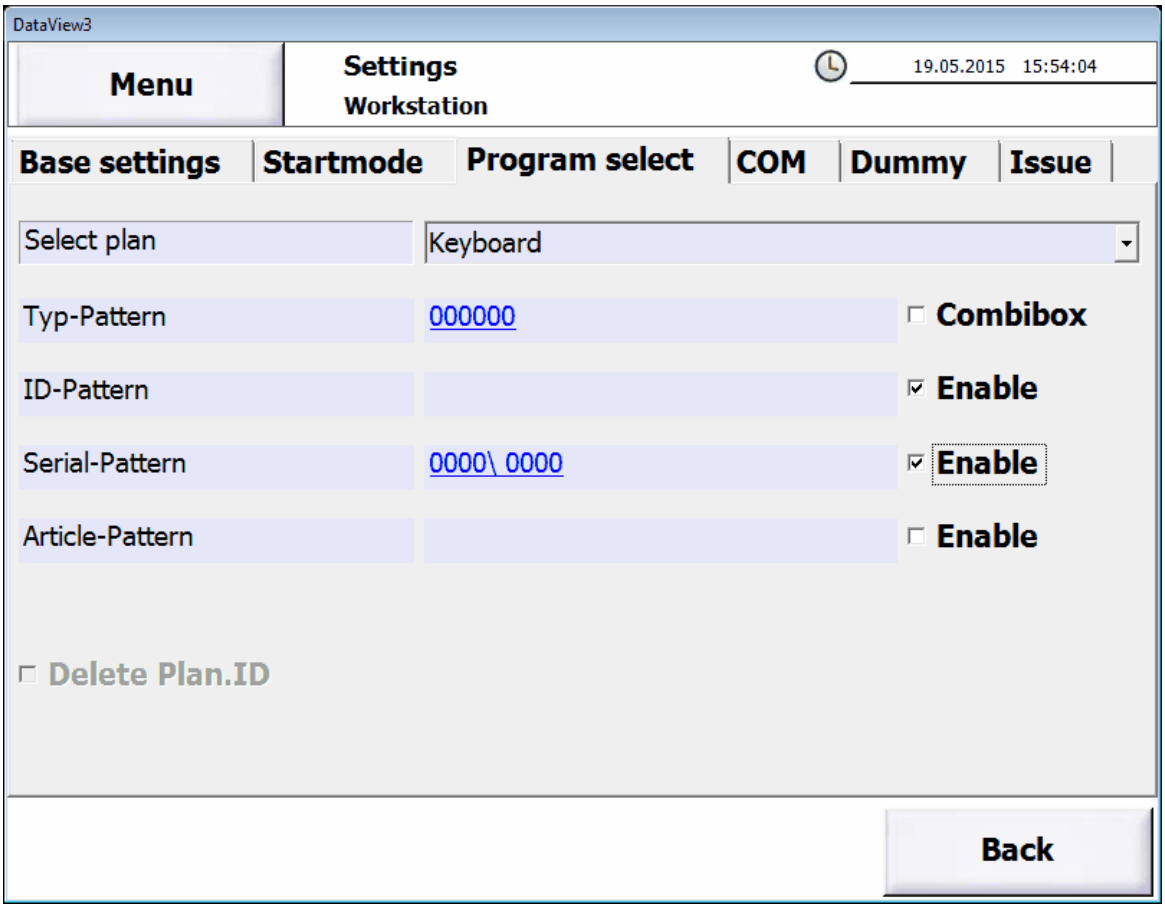
2.2.6.1.2 Article groups

Should for automatic test plan selection only the article number be used the pattern has to be given in field **Typ-Pattern**. The check boxes remain inactive and the other fields remain empty. The pattern must be entered that the characters for the group are included in paranthesis. In the test plan only the article group ist entered for the identification.



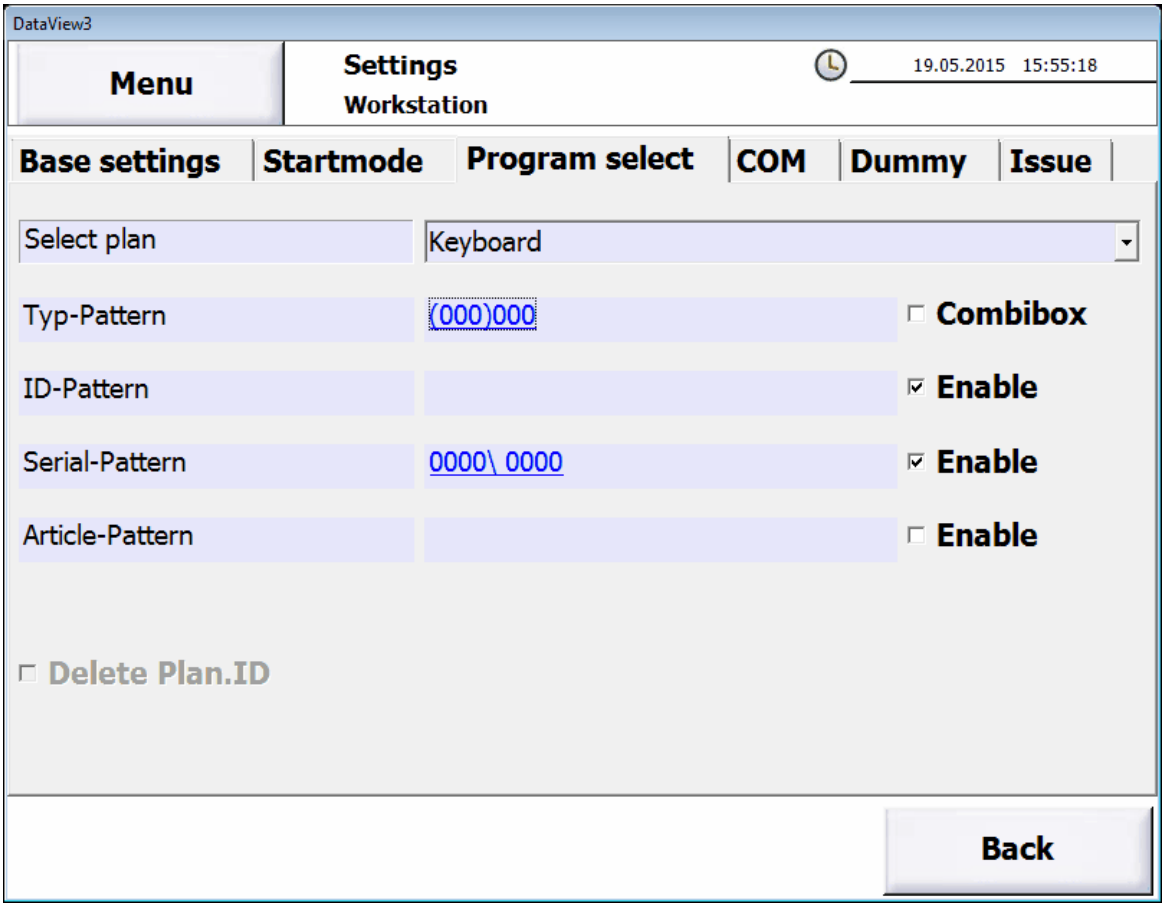
2.2.6.1.3 Article- and serial number

Should for automatic test plan selection the article number and the serial number in sepearate fields be entered both check boxes for **ID-Pattern** and **Serial-Pattern** must be activated. In the fields **Typ-Pattern** and **Serial-Pattern** the patterns are entered. There is no need to enter something in **ID-Pattern** because this pattern is identical with the pattern in **Typ-Pattern**. The check box **Combibox** remains inactive.



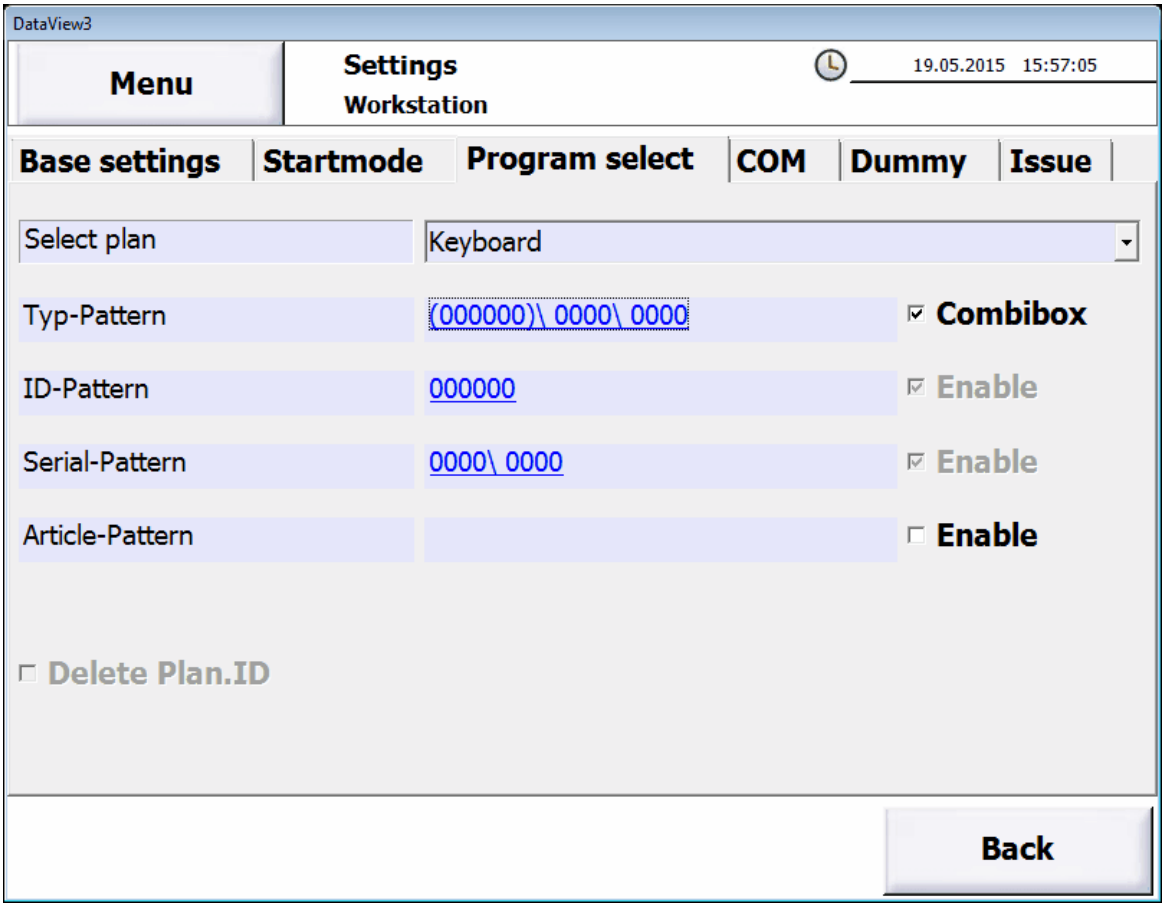
2.2.6.1.4 Article groups and serial number

Should for automatic test plan selection the article number and the serial number in sepearate fields be entered both check boxes for **ID-Pattern** and **Serial-Pattern** must be activated. In the fields **Typ-Pattern** and **Serial-Pattern** the patterns are entered. The pattern must be entered that the characters for the group are included in paranthesis. In the test plan only the article group ist entered for the identification. There is no need to enter something in **ID-Pattern** because this pattern is identical with the pattern in **Typ-Pattern**. The check box **Combibox** remains inactive.



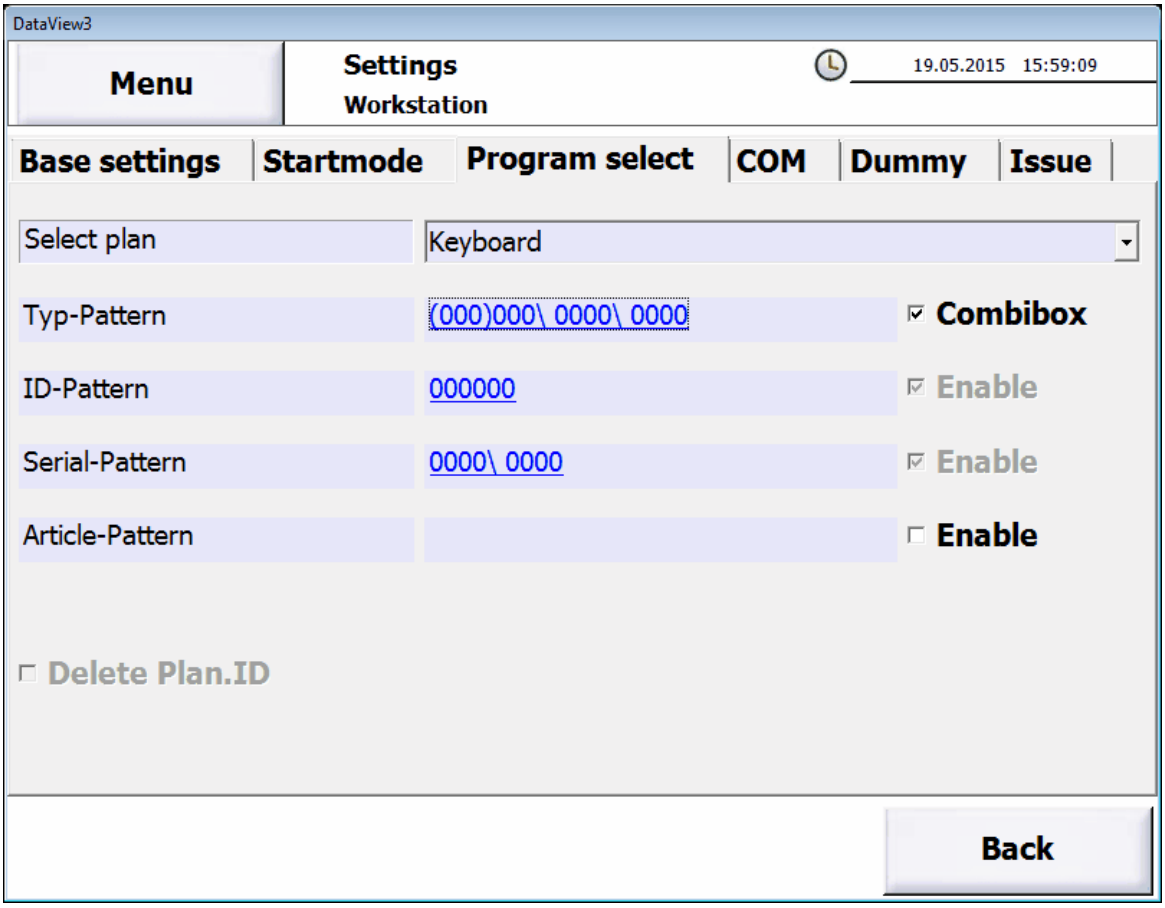
2.2.6.1.5 Combined entrance

Should for automatic test plan selection the article number and the serial number in a common field be entered the check box **Combibox** has to be activated and in all fields an entry has to be made for the patterns. The pattern in field **Typ-Pattern** must be entered that the characters for the article number are include in paranthesis. The sequence of the fields is fixed first the article number and then the serial number. The setting look like shown below.



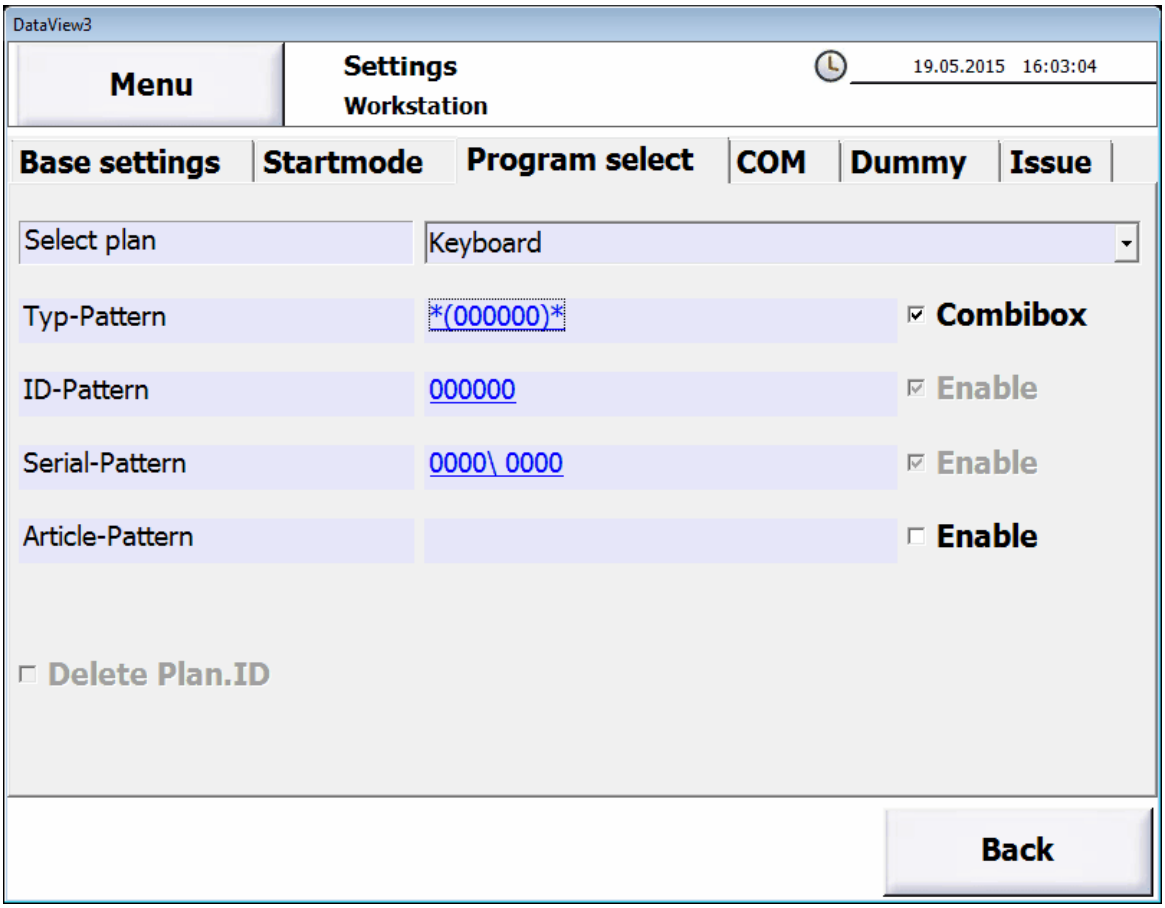
2.2.6.1.6 Combined entrence with article groups

Should for automatic test plan selection the article number and the serial number in a common field be entered the check box **Combibox** has to be activated and in all fields an entry has to be made for the patterns. The pattern in field **Typ-Pattern** must be entered that the characters for the group are included in paranthesis. The sequence of the fields is fixed first the article number and then the serial number. The setting looks like shown below.



2.2.6.1.7 Variable sequence in one field

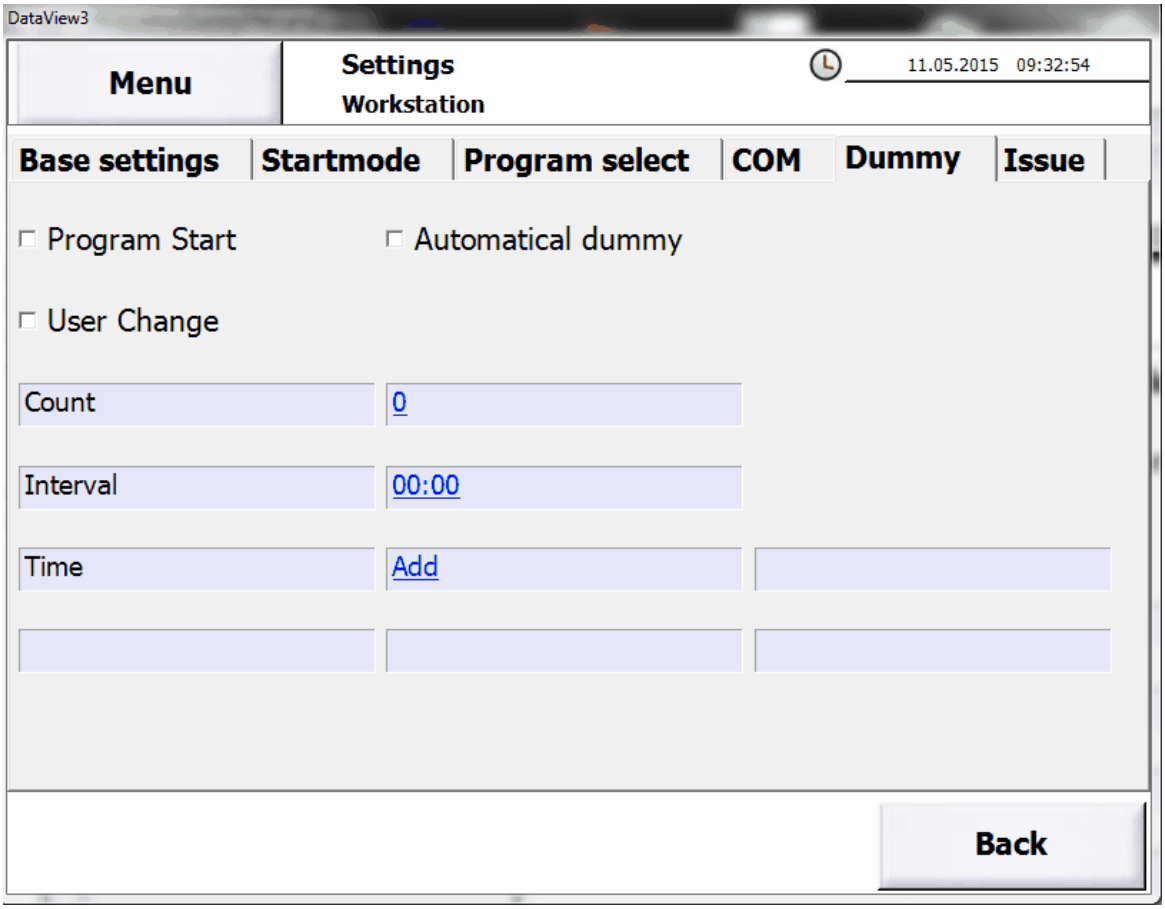
Is the sequence of the fields undetermined so the fields must be separated by a character. The pattern for the type and the serial number must be different. Otherwise the fields cannot be separated. In this case the setting looks like shown below.



2.2.7 Dummy test

These settings must be done if you want to check the **ATS400** and the test station for functionality.

Open the Dialog using `Settings` -> `Workstation` -> `Dummy`.



Parameter	Description
`Program Start`	The dummy test will be done when the program starts.
`User Change`	The dummy test will be done after a user logs in.
`Count`	The dummy test will be done after the given number of tests. When opening a test plan or changing it the counter will be reset to 0.
`Interval`	Time interval between two dummy tests. Checking for the end of the interval will be done when waiting for the start condition of the test step or when waiting for the identification of the unit under test. The intervall starts after a successfull dummy test.
`Time`	Up to 5 points in time can be defined when a dummy test will be performed. Checking for the time will be done when

Parameter	Description
	waiting for the start condition of the test step or when waiting for the identification of the unit under test. The times will be repeated for each day.
Automatical dummy	This checkbox must be set when an automatic dummy will be used.

Any combination can be configured despite of such a setting makes sense.

Important

The name of the result file and the report files are according to the same rules as with normal test plans.

Will in the file name not choose to use DateTime only the last dummy test will be recorded. Will the dummy test be executed after a certain amount of tests the result file and the report of the last test will be overwritten.

Will by creating the folder name a preset keyword or a keyword from the test type Data input be used invalid folder names may arise when they should be stored in subfolders.

Will **Program Start** be used together with **Time** the following rule applies:
The dummy test of the next point in time in the future will not be executed.
Example:
The points in time 8:00 and 16:00 are configured. The successfull dummy test when starting the program was at 7:55. Therefore the dummy test at 8:00 will not be executed. The next dummy test will be at 16:00.

Will **Program Start** be used together with **User Change** then after the start of the program and loging in of the user the dummy test will be executed only once.

Following settings are recommended if no other rules apply:

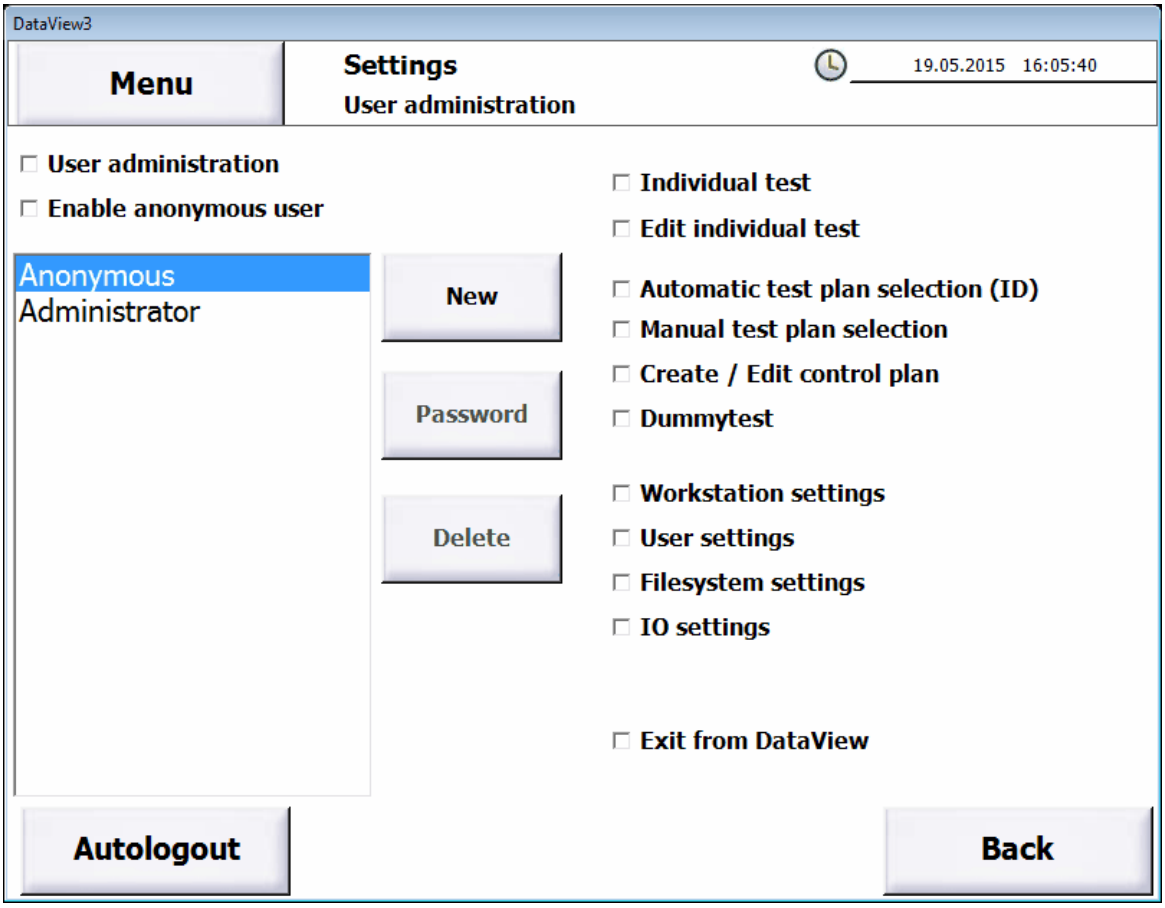
Scenario	Setting
Laboratory use or single shift Device will be powerd off.	Select **Programm Start**.
Two shifts without user administration Device will be powerd off	Select **Program Start** and two times when the shifts begin.
Multiple shifts with user administration	Select **User Change**.

Scenario	Setting
Different Windows user	Select `Programm Start`.

2.2.8 User administration

With the user administration you can limit the possibilities of the users in **ETL DataView 3**.

Open the dialog choosing `Settings` -> `User administration`.



The check box `User administration` determins if you have user administration active. Is the check box active user administration is also active.

The check box `Enable anonymous user` determins if a user must log in. Is this check box active this user will be logged in automatically.

ETL DataView 3 has two user as default which cannot be deleted.

First this is *ADMIN*, who holds all rights as default. This user is provided to get access to the system without help from **ETL Prüftechnik** in the case the password has been forgotten. This user cannot be deleted. The factory default password for *ADMIN* is *ETL*. This can be changed but it is recommended to keep it.

Second this is *Anonymous* which allows to log in without displaying a login dialog. The factory default is that this user has no rights.

Important

As factory default the anonymous user has no rights. He cannot run a test, make settings or exit **ETL DataView 3**. This should be taken into consideration when choosing the startup mode.

2.2.8.1 Add an new user

Click on the button **New** to create an new user.

A new windows is opened to enter the user name. leaving with **OK** the user will be created and he will be added to the list.

The user name and the password are case sensitive.

2.2.8.2 Enter password

Select the user in the list and click on the button **Password** to add or change the password.

The user name and the password are case sensitive.

The password is encrypted an cannot be restored.

2.2.8.3 Delete user

Select the user in the list. Click on the button **Delete**. A confirmation dialog is displayed. If you confirm the user will be deleted.

2.2.8.4 Assign rights

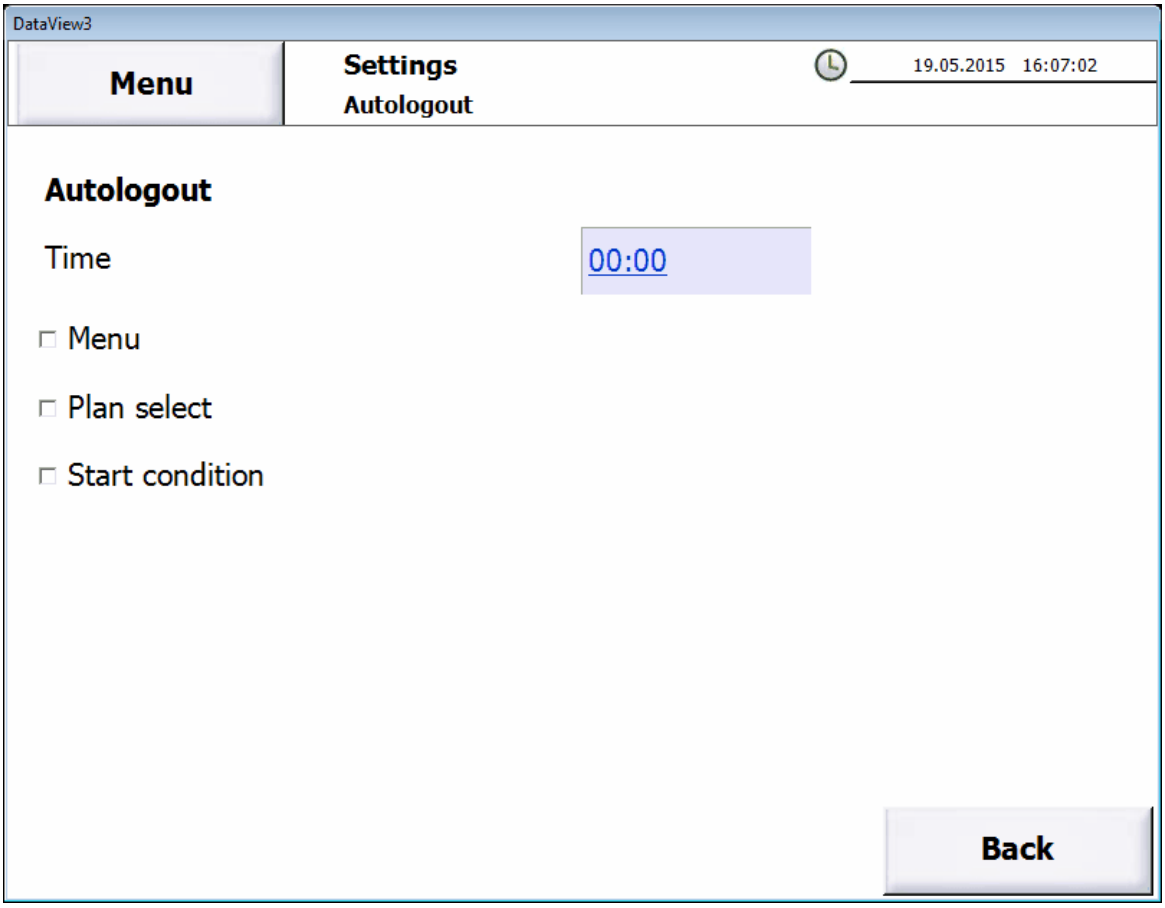
Select the user in the list. Activate or unactivate the check boxes on the right side to allow or deny the desired rights.

Important

Be carefull to give all users the right to use the window defined in Startup mode.

2.2.8.5 Automatic logout

Open the dialog with the button **Autologout**.



In this dialog the rules are configured a user will be logged out automatically.

Selection	Behaviour
Time	Determines the time interval the user is logged off.
Menu	The time intervall is active when the user is in a menu window. All menus and windows reached via button **Settings** are not considered.
Plan select	The time intervalis active when the user is in a window for test plan selection.
Start condition	The time intervall is active when waiting to read the start conditions of the first step in a running test plan.

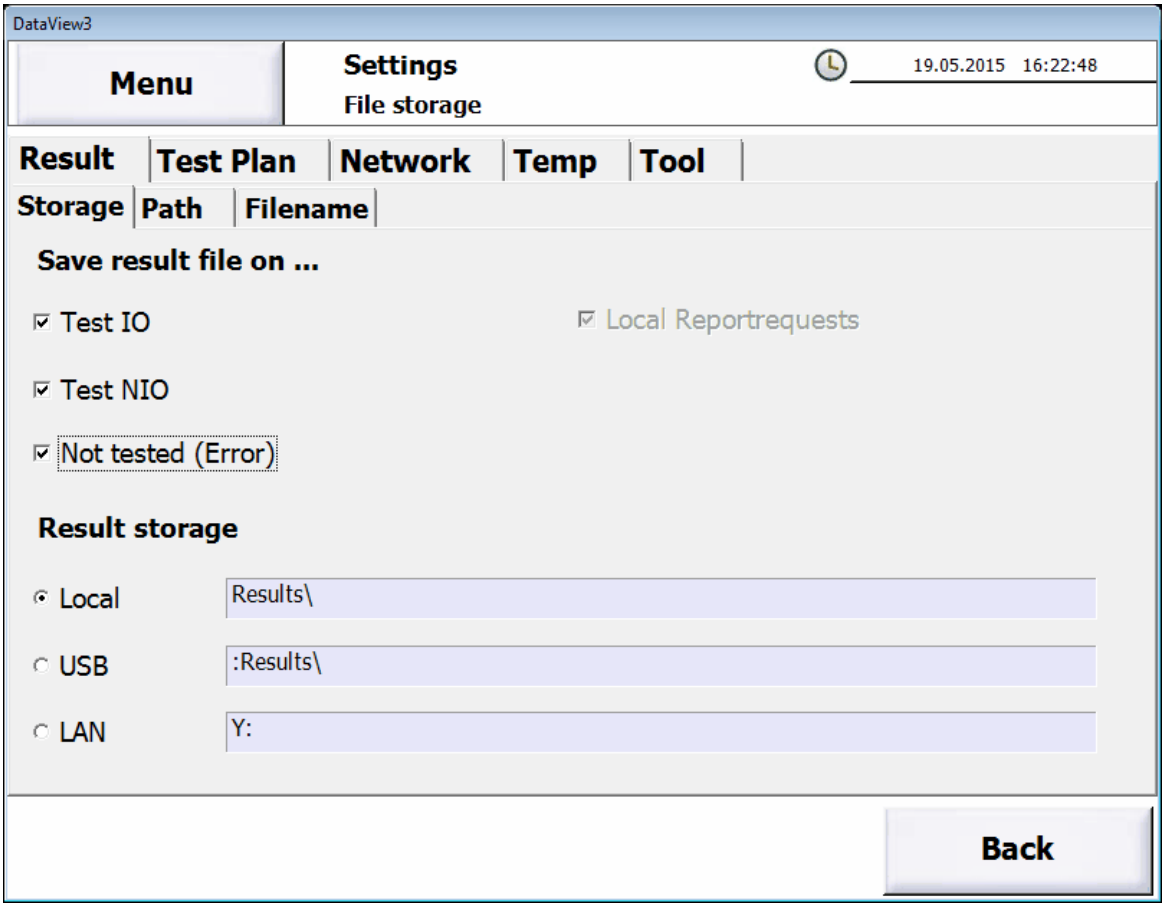
2.2.9 File storage

In this menu you can setup additonal to the storage places for result files and test plans also the network settings. Furthermore temporary options for storage of result files experiencing problems with the storage media and release storage place on the internal storage media.

Open the dialog choosing **Settings** -> **File storage**.

2.2.9.1 Result files

On the property page **Result** you can define in which cases result files will be stored and on which media.



In the upper part of the property page **Storage** you can select in which cases result files will be stored. There are three possibilities and you can choose one or multiple of them.

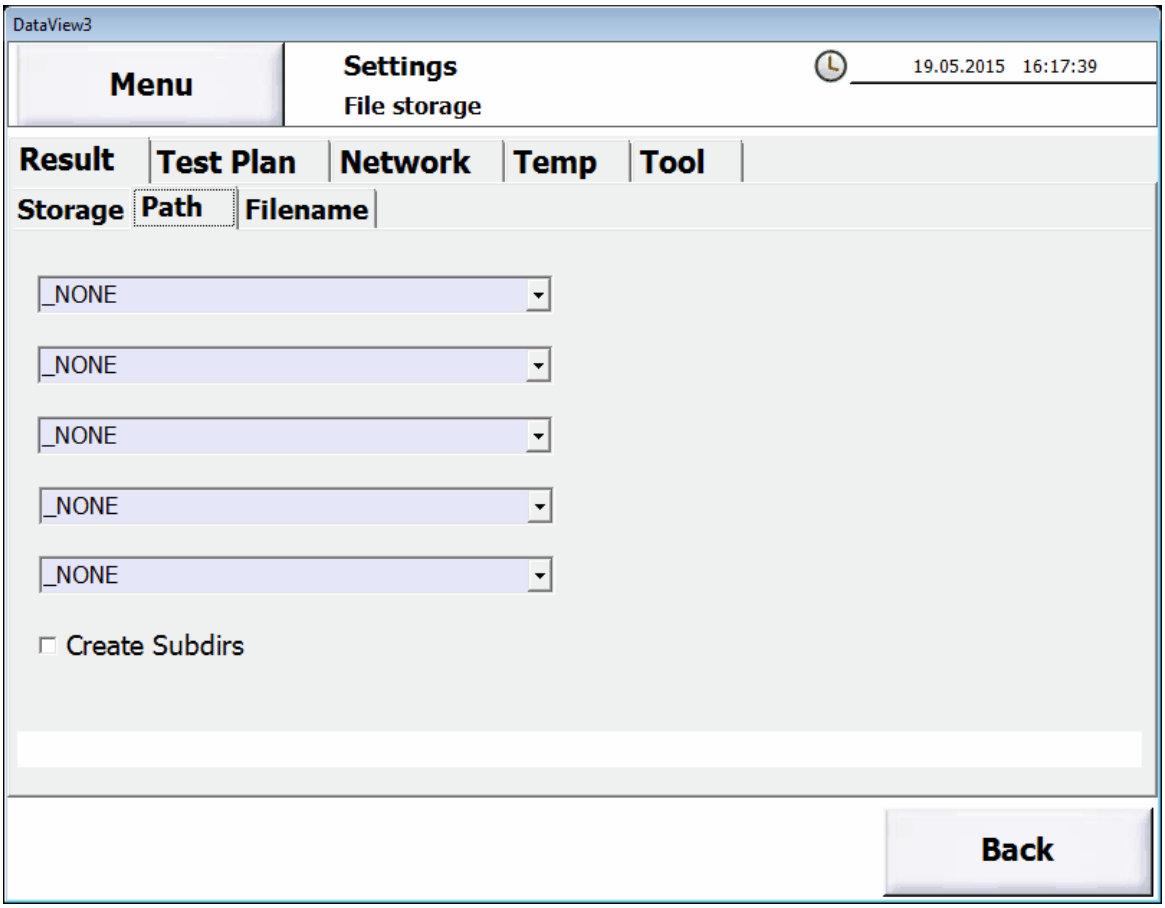
With **Test IO**
result files will be stored in the case the overall result is passed.

With **Test NIO**
result files will be stored in the case the overall result is failed.

Wiht **Not tested (Error)**
result files will be stored in the case the test was aborted by the user or by a problem arising from the system, e. g. overtemperature.

In the lower part of the property page **Storage** you can select the media to store the files on. Selecting **Local** the media of the system will be used. With variants X4 and X5 this is the buildt in SD-Card and with variants X6 and X8 this is the internal hard disk.

On the property **Path** you can define the naming of a folder for the result files and the report files.



On the property page **Path** you can make additional settings for the folder where result files and report files are stored. If you select **_NONE** in all fields no subfolder is created.

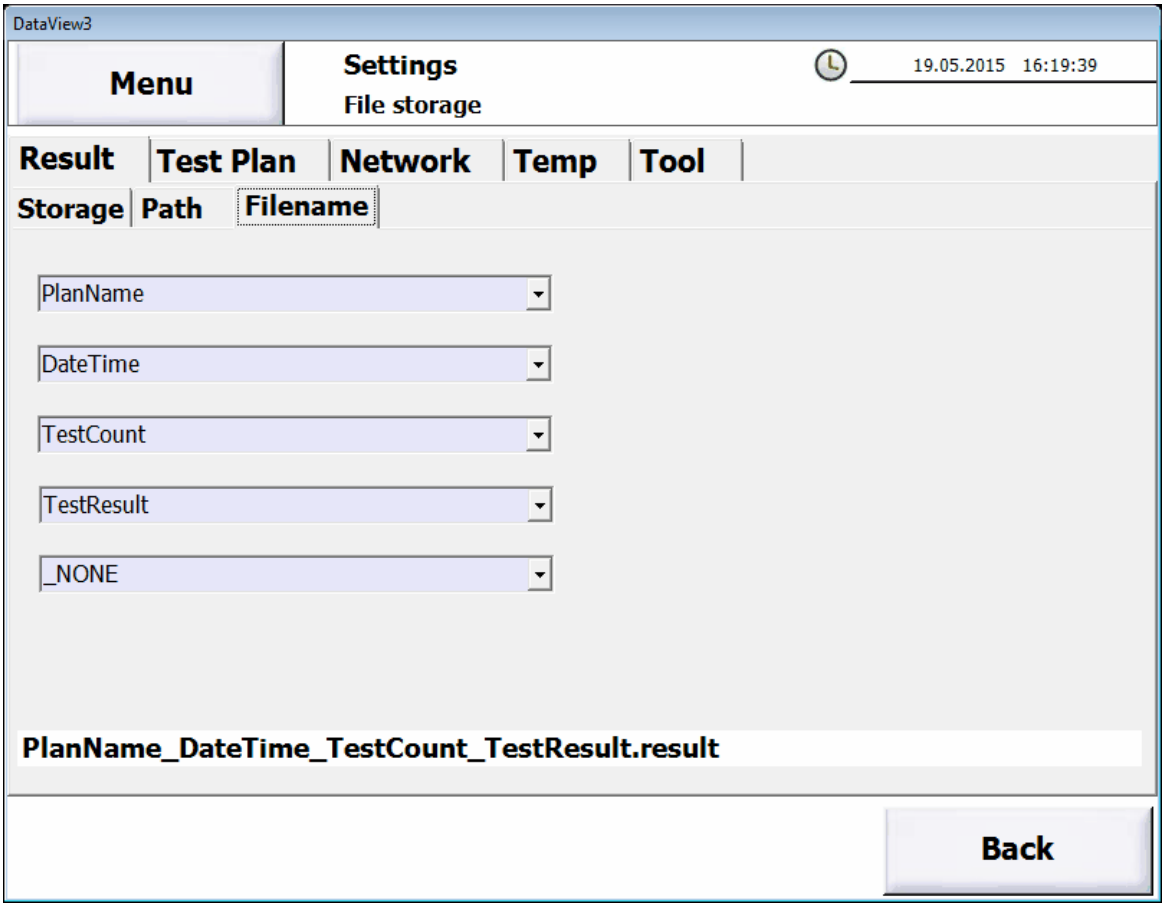
You can select from the keywords **PlanName**, **PlanID**, **Workstation**, **Type**, **UsedID**, **SerialNumber** and **Article**. **PlanID** is the identifikation of the test plan and **PlanName** the name of the test plan. **Workstation** is the name of the workstation. **Type**, **UsedID**, **SerialNumber** and **Article** result from the automatic plan selection.

The checkbox **Create Subdirs** determins how the fields are used. Is the checkbox inactive one subfolder will be created where its name is concatenated from the

diferrent fields. Is the checkbox active for each field a new subfolder is created in a hierarchical manner.

The combined path is displayed in the text field at the bottom.

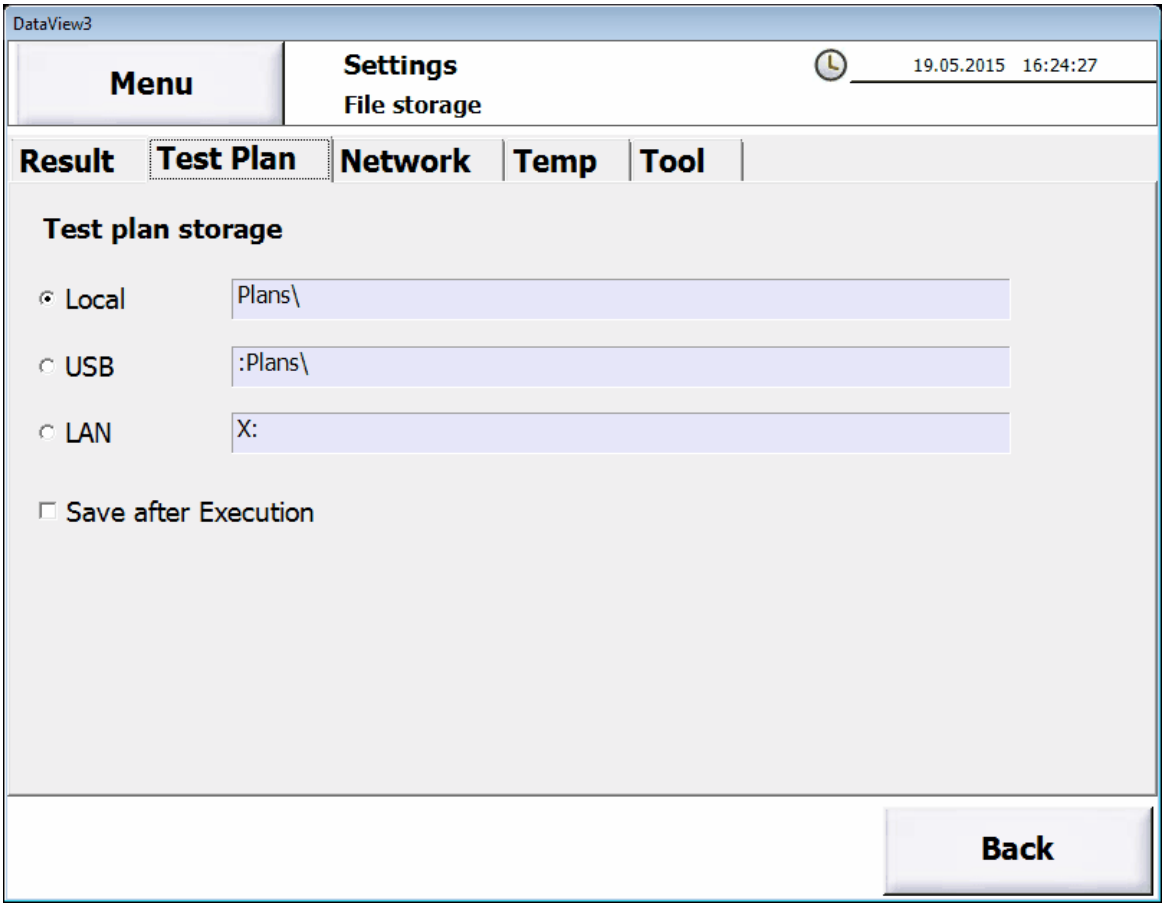
On the Property page **Filename** you can define the name of the result file and report file.



The above dispayed setting is factory default. The combined file name is displayed in the text field at the bottom.

2.2.9.2 Test plans

You can select the storage of the test plans.

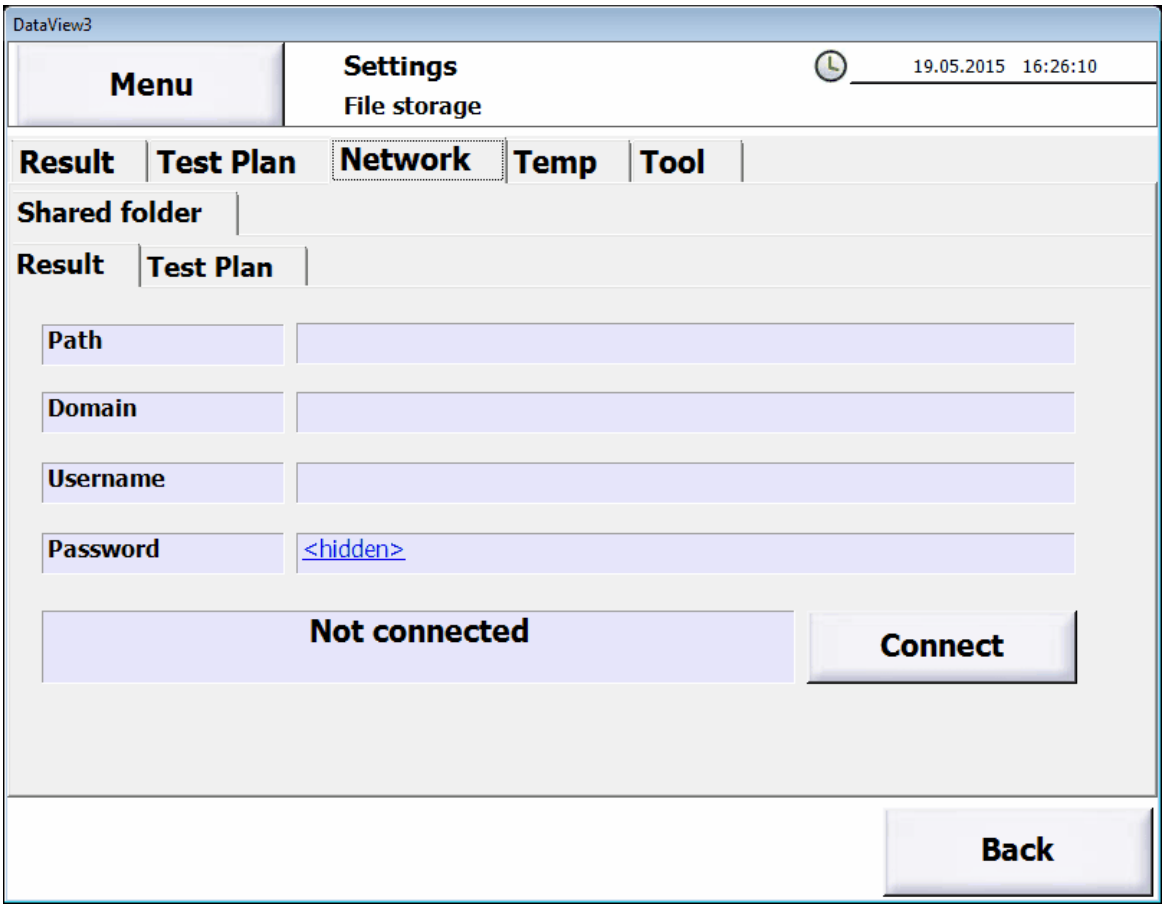


On the property page **Test Plan** you can select the storage media. You can select from one of the medias **Local**, **USB** or **LAN**.

Is the checkbox **Save after Execution** active the test plan will also be stored after executing a test. This will preserve data entered by the tester as default when using the test plan again.

2.2.9.3 Network

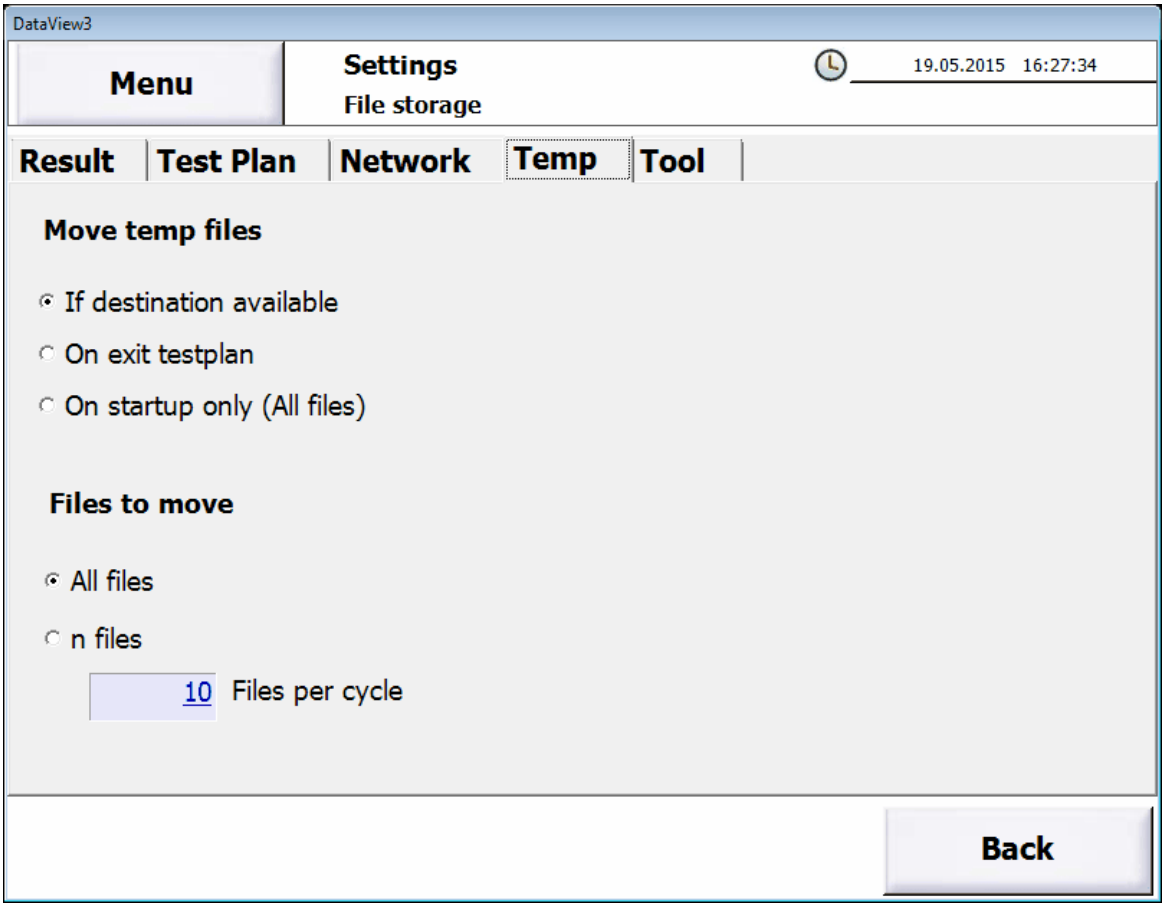
On the property page **Network** you must make the settings when chossing **LAN** for result files or test plans. The settings have to be made in similar way for result files and test plans.



Refer to the chapters in Adding to a network on how to use this dialog.

2.2.9.4 Temporary files

On the property page **Temp** you define when temporary stored result files and report files will be moved to their original destination folder.



This setting is only valid whe the storage media is set to **USB** or **LAN**. In this case there is the possibility that the storage media is not available when storing result files or report files. In this case the files will be stored locally. These files will be moved in the case the storage media is available again. Since there is the possibility that a larger amount of data must be moved and you cannot test during that activity you can define when and how much files will be moved. Factory default is **If destination available**.

With **If destination available** the files will be moved after the next test.

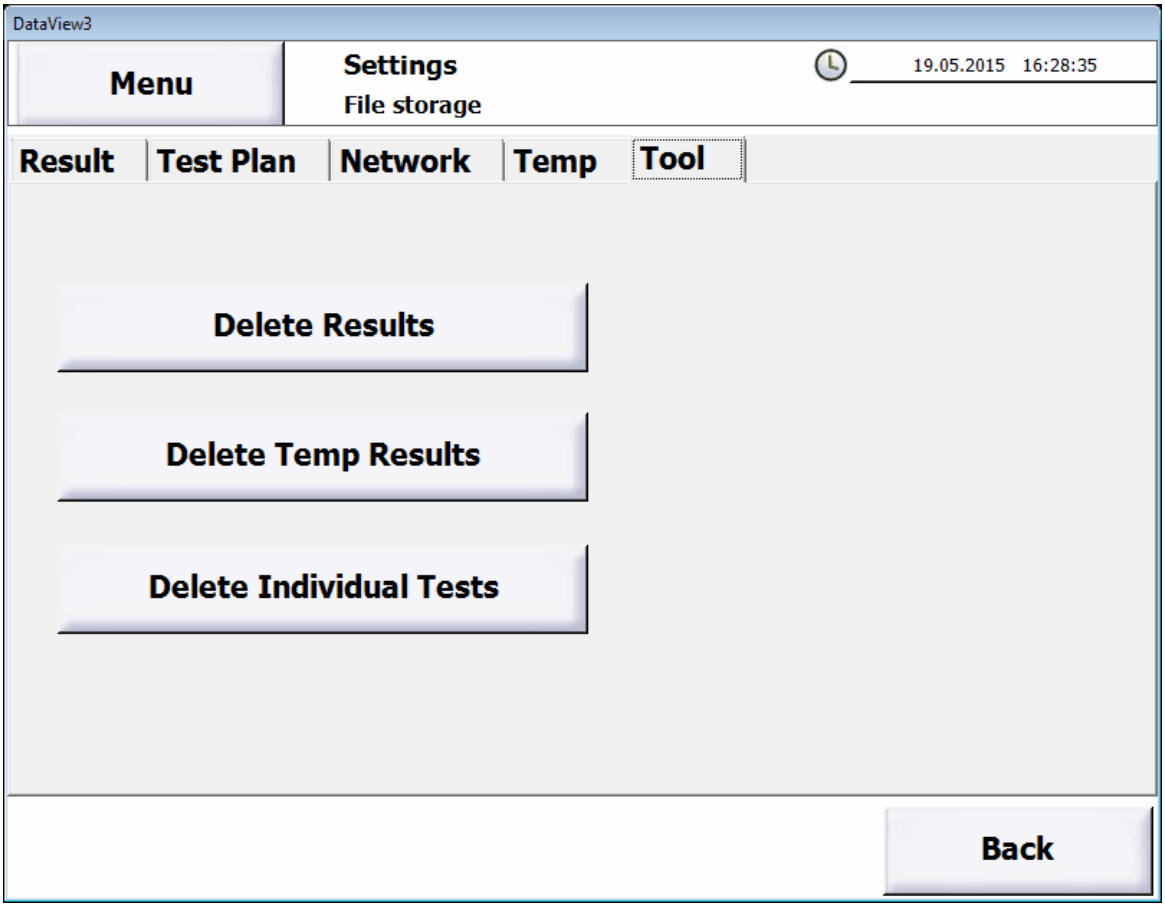
With **On exit testplan** the files will be moved the test plan will be exited.

With **On startup only (All files)** all files will be moved when **ETL DataView 3** is starting.

The radio button below **Files to move** are only valid when **If destination available** or **On exit testplan** is selected.
You can define that all files or a limited number of files should be moved.

2.2.9.5 Tool

On the property page `Tool` you can **permanently** delete files. There **will be no** confirmation dialog.



With the button `Delete Results` the localy stored result files and report files will be deleted.

With the button `Delete Temp Results` the temporary stored result files and report files will be deleted.

With the button `Delete Individual Tests` the settings for the single step test will be reset to factory default.

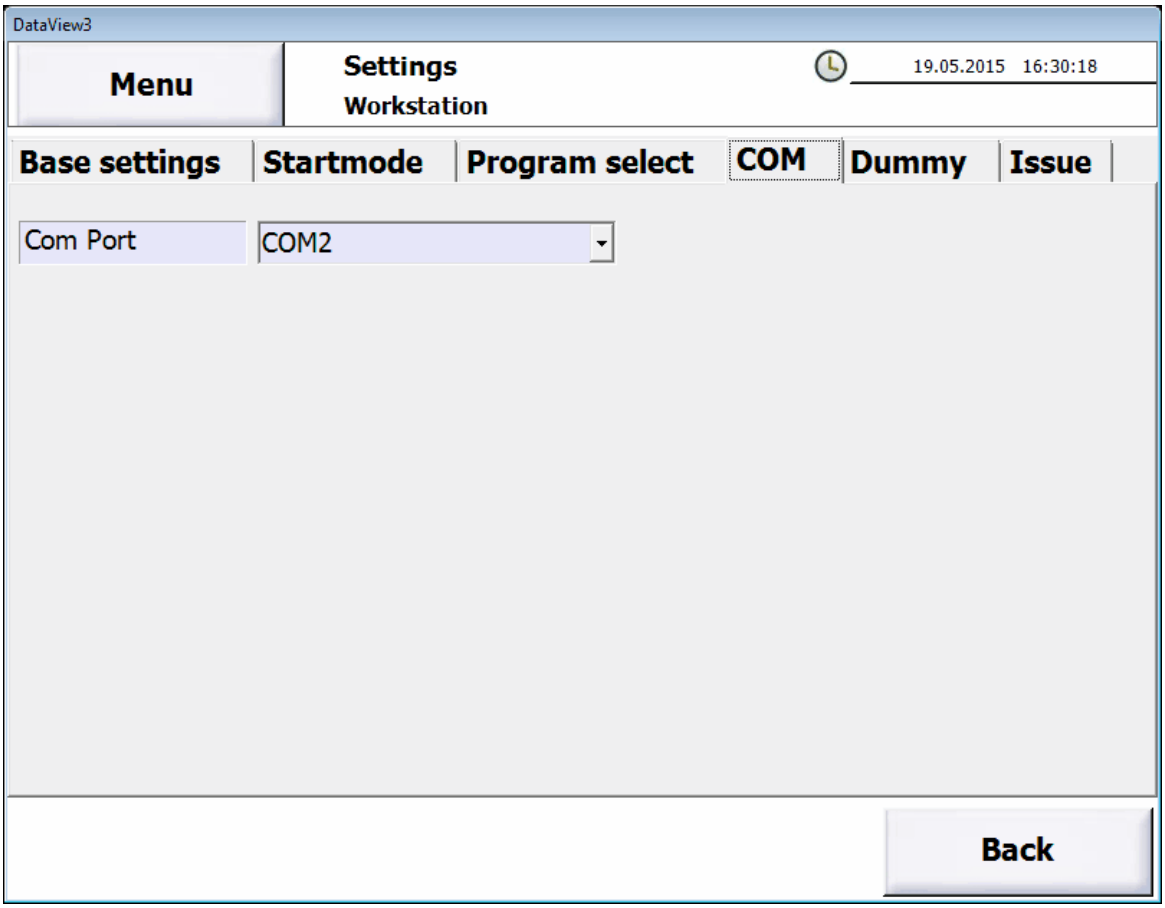
2.2.10 Serial interface

For **ETL Dataview 3** can connect to the device the serial interface must be configured. You must do this only when installing **ETL Dataview 3** on your own system.

Important

With the variants **ATS400** X8 and X6 the serial interface is set to COM2 as factory default. With the variants **ATS400** X5 and X4 the serial interface cannot be configured.

Open the dialog choosing `Settings` -> `Workstation` -> `COM`.



All available serial interfaces on the system will be displayed. Choose those interface the **ATS400** is connected with.

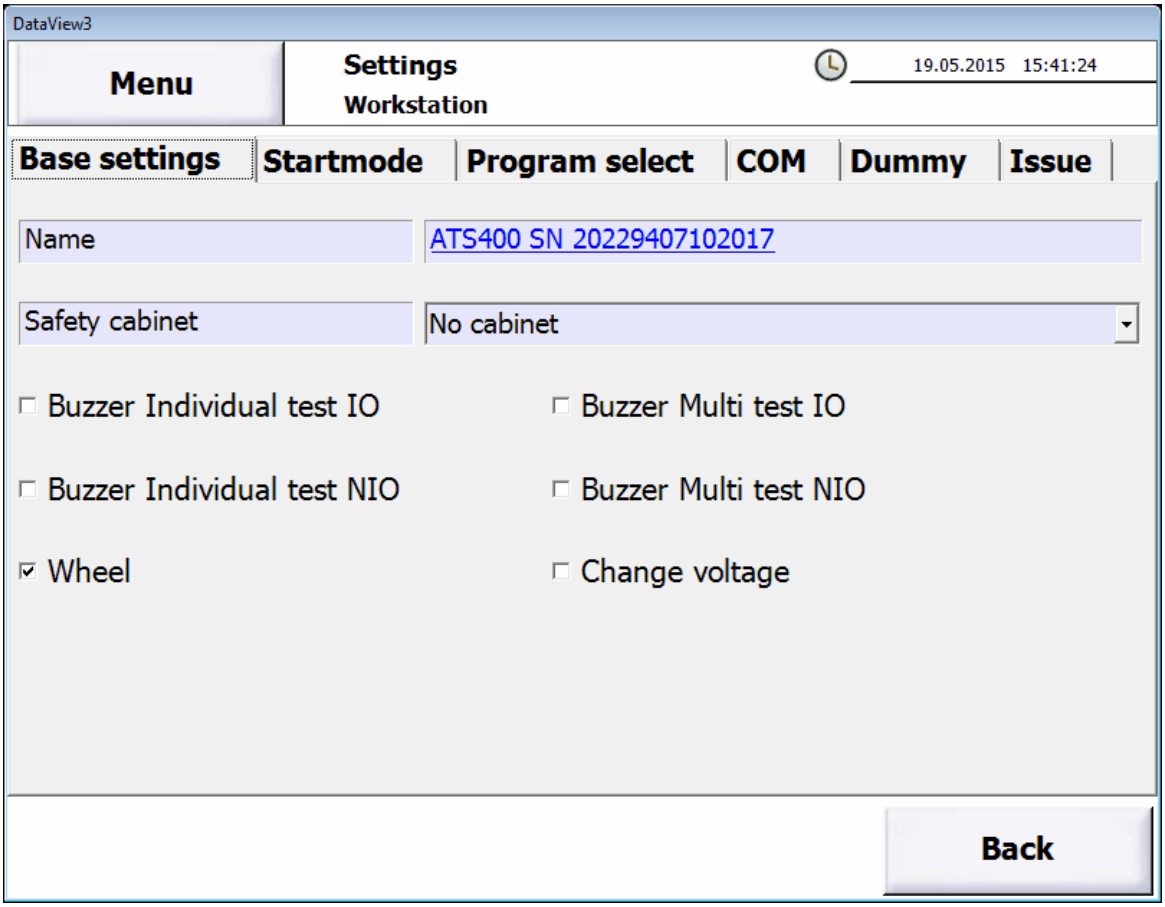
After clicking on the button `Connect` the serial interface will be opened and tried to connect to the device. Is a connectin established the LED `Remote` at the front of the **ATS400** is on.

Close the dialog with the button `Back` and exit **ETL DataView 3**.

2.2.11 Push button

Using a second front together with variant X2 it is nesseccary to deactivate the push button on the front.

Open the dialog choosing **Settings** -> **Workstation** -> **Base settings**.

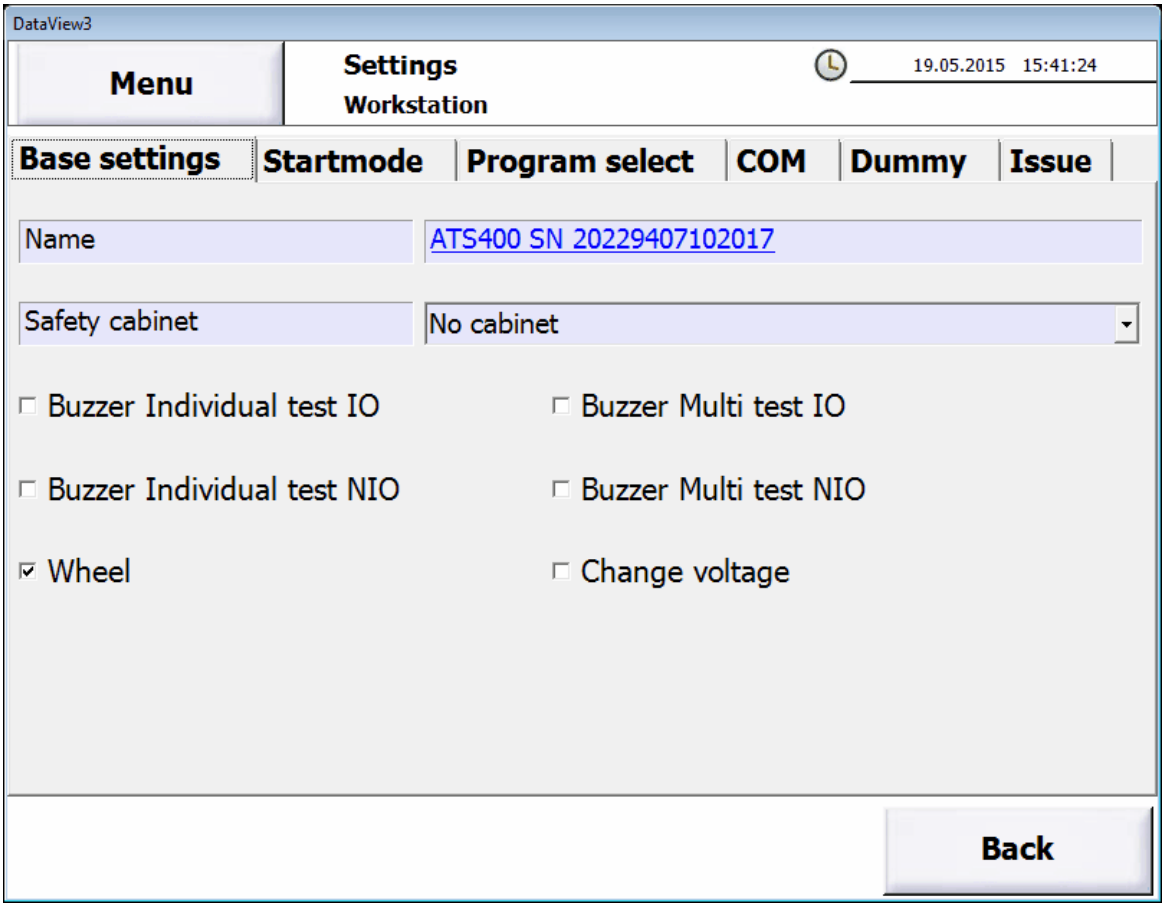


Is the checkbox **Wheel** active the push button can be used. This setting is stored in the file **Settings.conf**.

2.2.12 Change voltage

There is the possibility to change the voltage of a high voltage test during the test using the push button. This possibility must be activated.

Open the dialog choosing **Settings** -> **Workstation** -> **Base settings**.



Is the checkbox **Change voltage** active you can use the push button to change the voltage during a test. This setting is stored in the file **Settings.conf**.

2.2.13 Dummy test plan

The dummy test plan is created by ETL Prüftechnik and will be delivered with the dummy. You can use only one dummy test plan. The dummy test plan is stored in the subfolder **DummyPlan** of the **ETL DataView 3** folder. There must only one file with the extention **.plan** in this folder.

The dummy test plan will be used as a normal test plan. A result file will be created according to the settings in **Settings** -> **File Storage**.

As factory default a dummy test plan doesn't create a report file.

The execution of the dummy test plan is done manually or according to the settings in Dummy test.

Caution

The following procedure is not covered by any rights within **ETL DataView 3**. The work described here can be done by any user having the right to change test plans.

Important

The name of the result file and the report files are according to the same rules as with normal test plans.

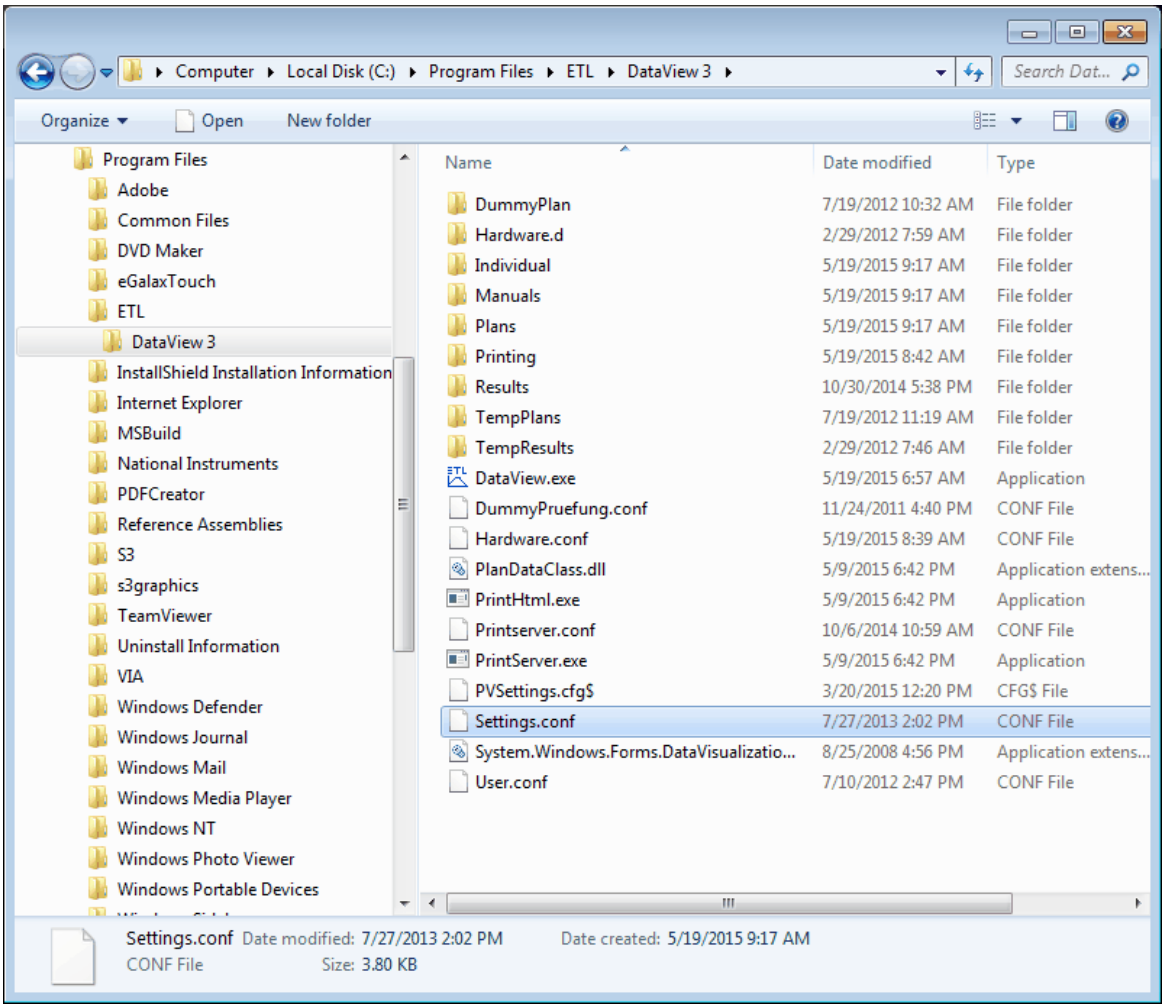
Will in the file name not choose to use DateTime only the last dummy test will be recorded. Will the dummy test be executed after a certain amount of tests the result file and the report of the last test will be overwritten.

Will by creating the folder name a preset keyword or a keyword from the test type Data input be used invalid folder names may arise when they should be stored in subfolders.

Exit a running **ETL DataView 3**.

Copy the dummy test plan for Subfolder `DummyPlan` into the folder where your test plans are located.Be carefull not to overwrite an existing test plan.

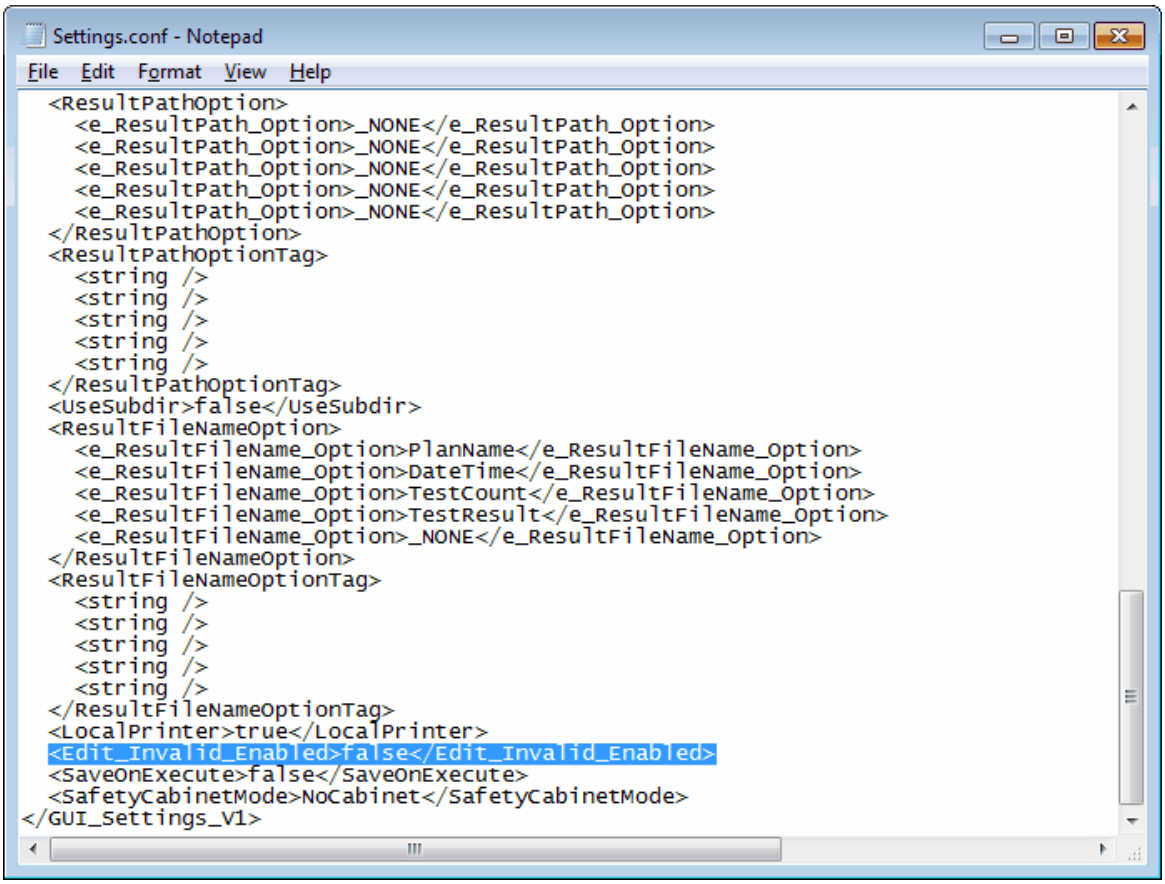
Navigate in Windows Explorer to the folder **C:\Programm files\ETL\DataView 3**.
Open the file **Settings.conf** with the Windows Editor.



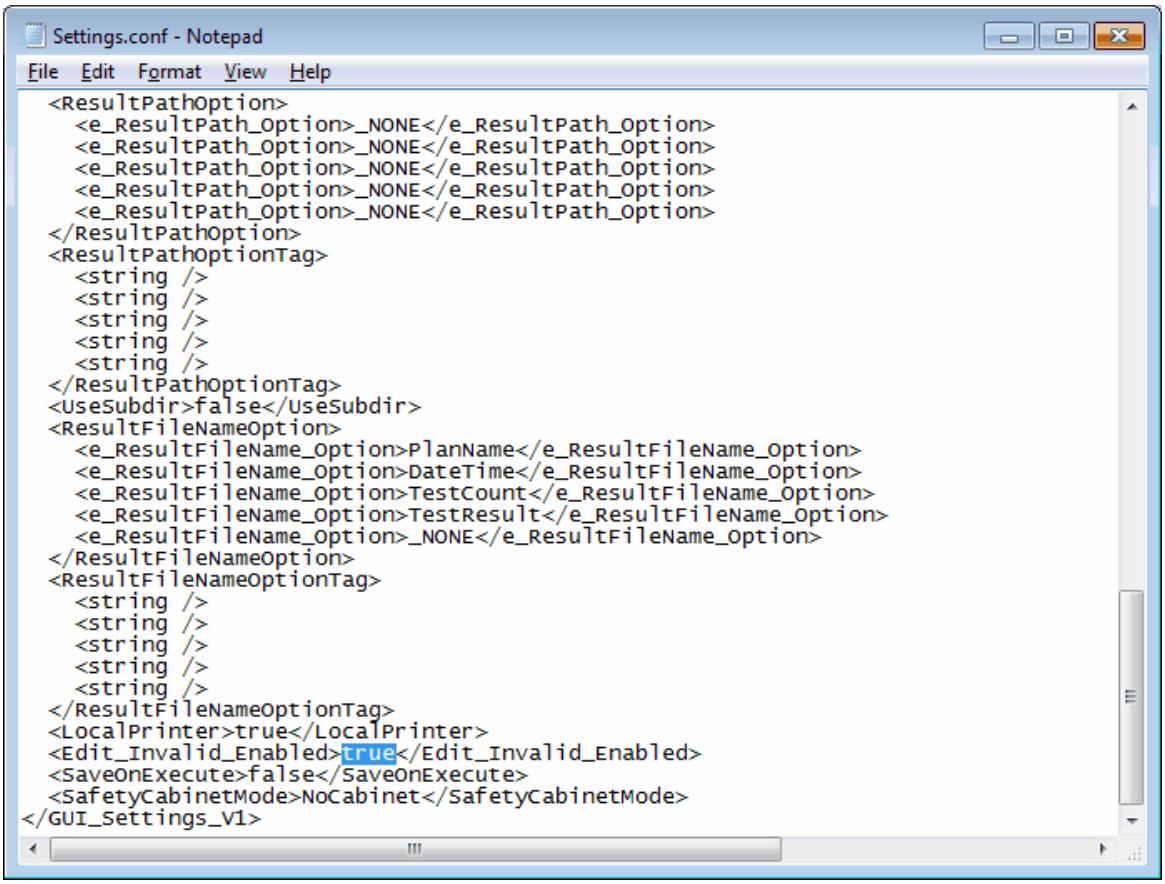
Open the file with a double click and select in the opening dialog **Select a program from a list of installed programs** and close it with the button **OK**.

In the next dialog choose **Notepad** and close the dialog with the button **OK**.

Windows Notepad will open. Find the line with the entry **Edit_Invalid_Enabled**.



Change the value from **false** into **true**.



Save the file and close the editor.

Start **ETL DataView 3** again.

Change the dummy test plan by adding the desired report options. Exit **ETL DataView 3** again.

Change in the subfolder **DummyPlan** the extension of the file from **.plan** into **.plan$**.

Move the dummy test plan from the folder with your test plans into the subfolder **DummyPlan**.

Change the value in **Edit_Invalid_Enabled** in the file **Settings.conf** from **true** to **false**.

2.2.14 Printserver configuration

For configuring the print server the configuration file must be present. You can configure that the files from the report creation will be stored in a different location as the result files, the behaviour how to deal with unknown keywords in the report und the timeout for waiting on PDF-reports or printing.

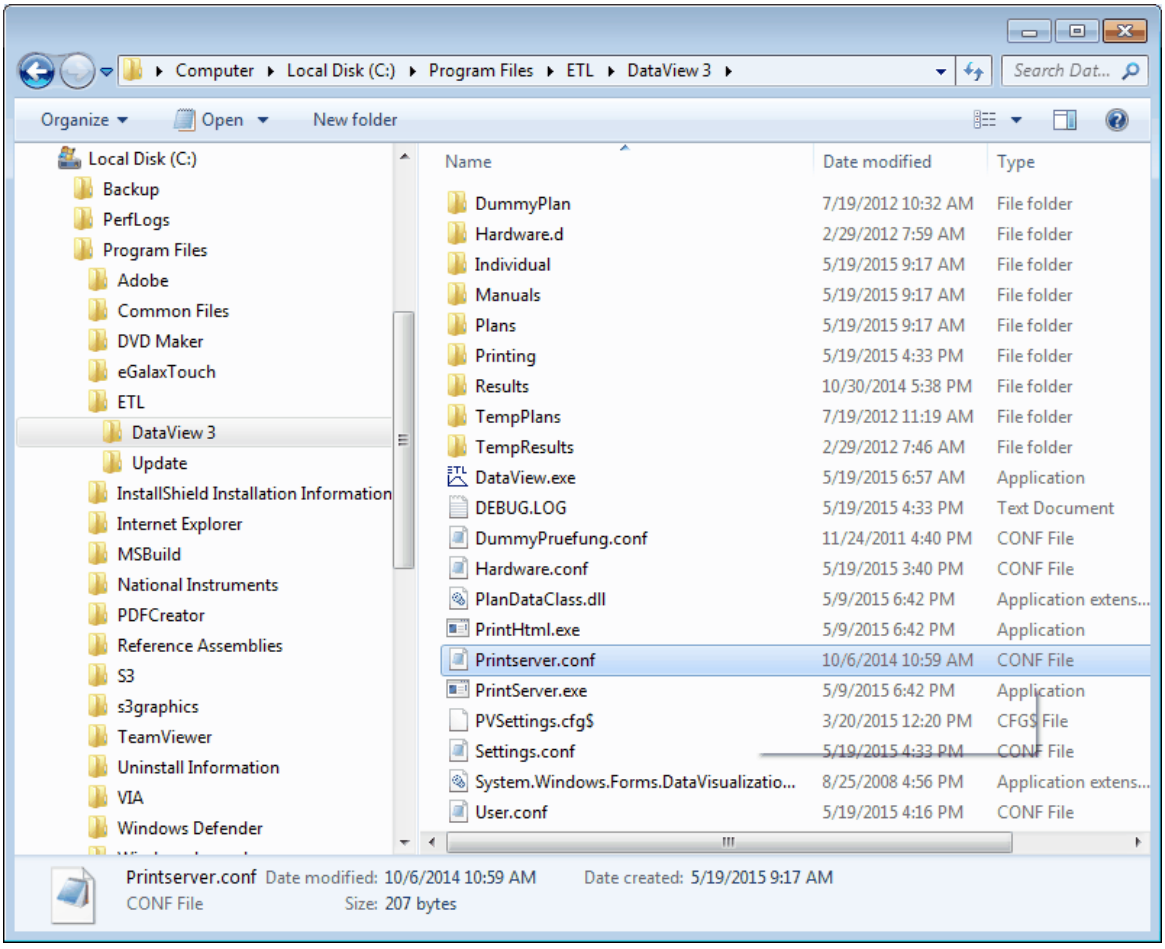
Important

In the case the configured folder is on an external storage media, e. g. a memory stick or network, this media must be present before the first report will be created. The tester will see a runtime message and the file **will not** be stored.

This settings must be made manually and are not supported by **ETL DataView 3**.

Exit **ETL DataView 3**. The configuration will only be read during startup.

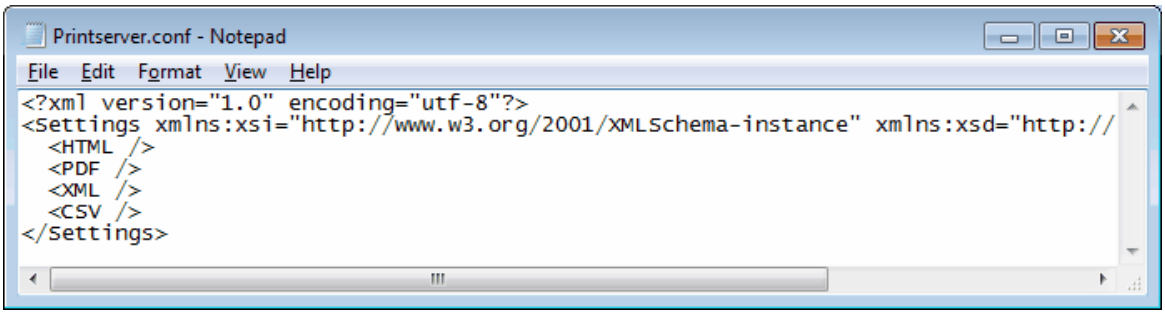
Navigate in Windows Explorer to the folder `C:\Programm Files\ETL\DataView 3`. Open the file `Printserver.conf` with Notepad.



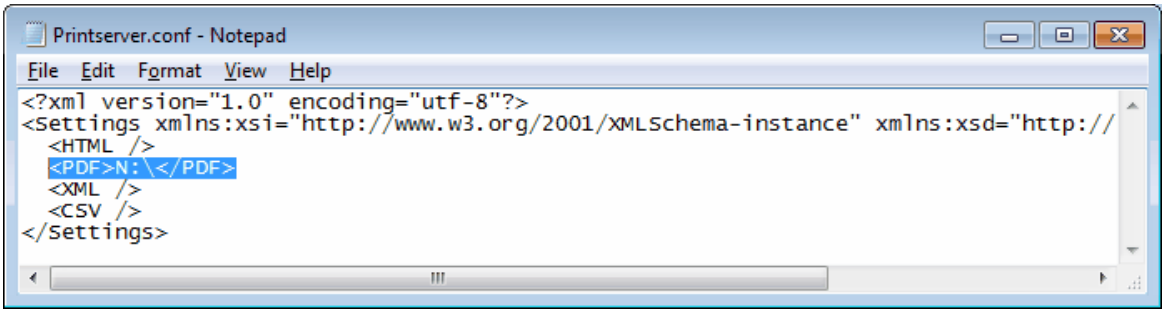
Open the file with a double click and select in the opening dialog `Select a program from a list of installed programs` and close it with the button `OK`.

In the next dialog choose **Notepad** and close the dialog with the button **OK**.

For configuring an alternative folder you must change the entry for the report type. The file contains for each report type an empty element. You must create an opening and closing element.



Add a folder name or change an existing folder name. In this example for the report type **PDF** to folder **N:**.



To change the timeout for the report file you must change one of the existing numbers. Be aware that the time is in milliseconds.

With the element **Debug** the output can be changed if an unknown keyword is found.

The element **PdfTimeout** is a time within the PDF-file must be created. Is the file created before this time is elasped the next report can be created.

The element **PrintTimeout** is a wait time. The complete time will be waited before the next report can be created.

Save the file and close Notepad. Start **ETL DataView 3** again.

3 Test plan editing

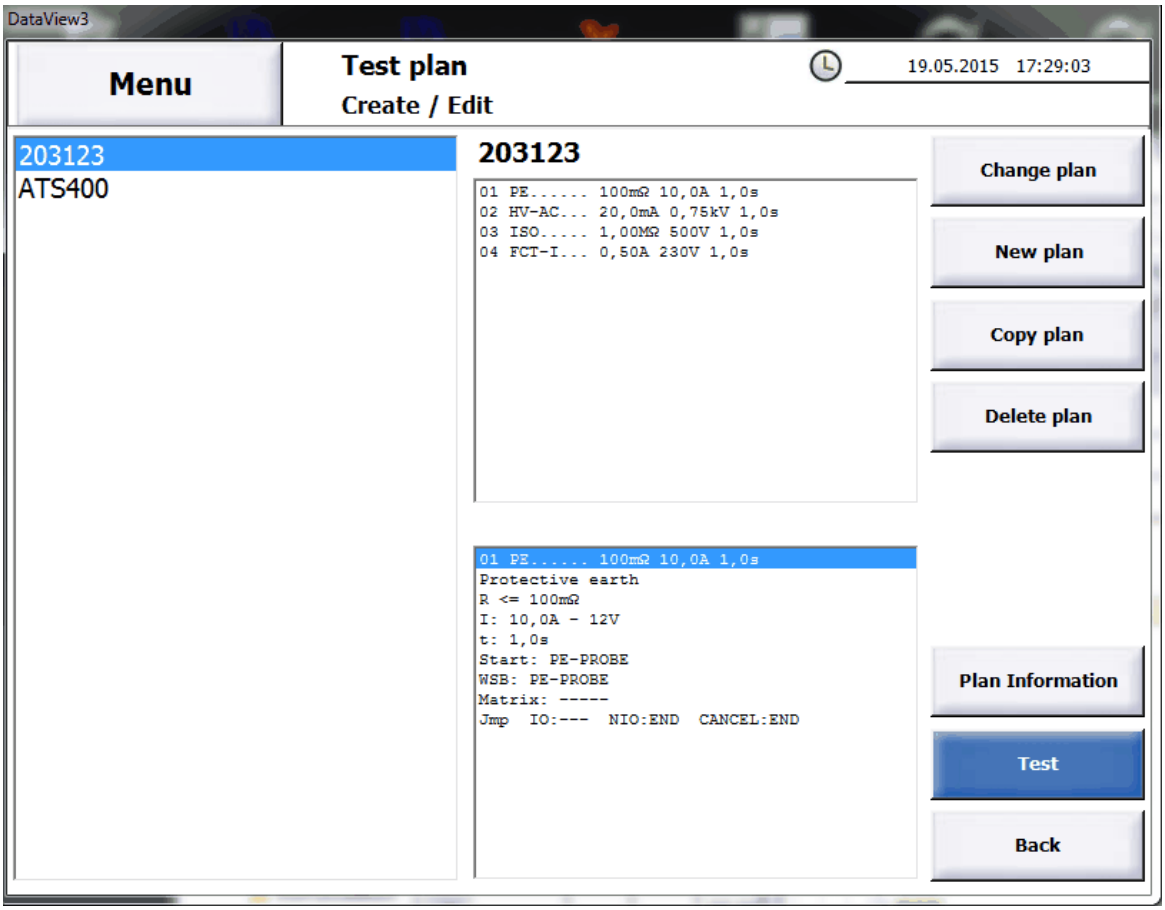
This part of the manual is aimed at the persons who create and edit the test plans.

It contains all information that is necessary to create the test plans in accordance with the requirements for the test and the existing test types.

All illustrations and options refer to the Windows variant that you receive with the **ATS400** variants X2, X6 and X8. The Windows CE variants with the **ATS400** variants X4 and X5 do not contain all options.

3.1 Administering test plans

Open the dialog choosing `Test plan` -> `Create / Edit`.



On the left side a list of the currently available test plans is displayed.

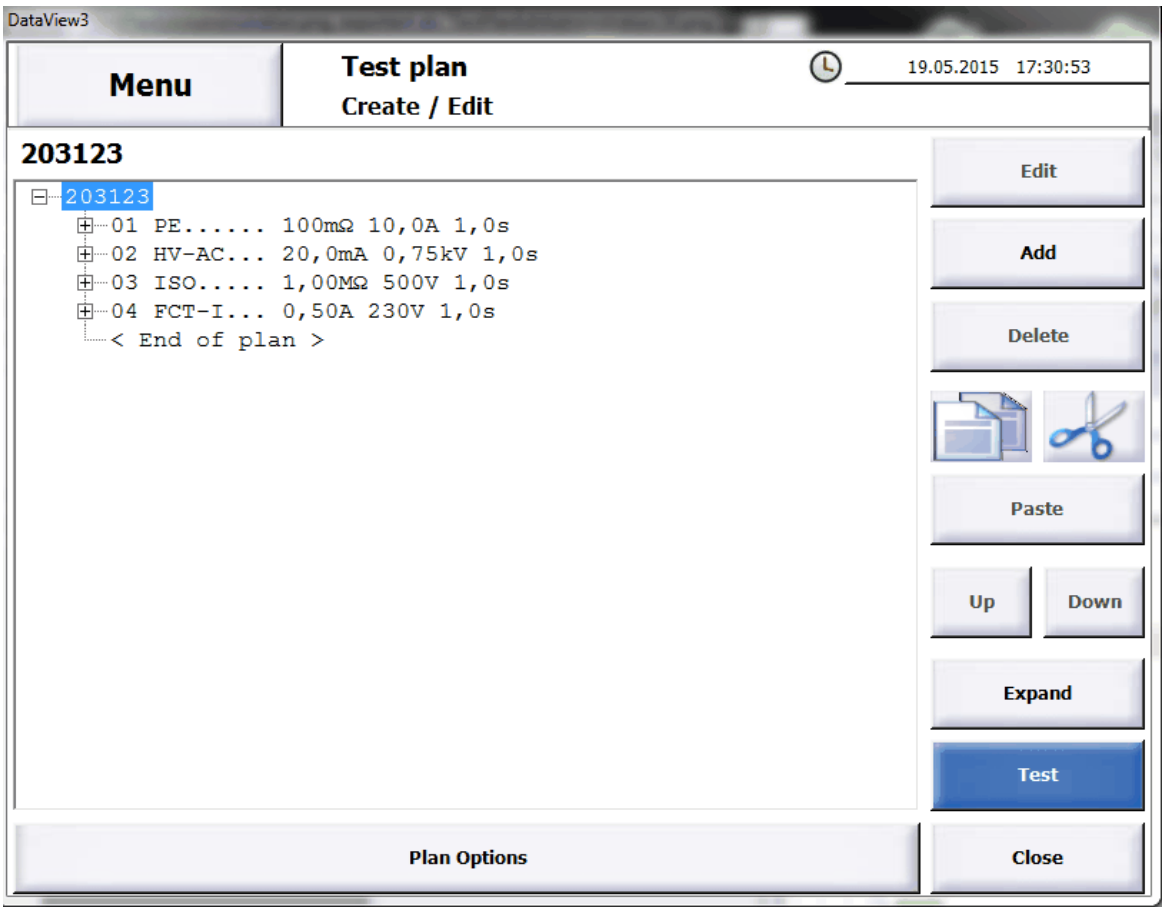
In the midth upper part the test steps in the selected test plan are displayed. Is no test plan selected the list is empty.

In the midth lower part the data for the test step is displayed. Is no test plan or no test step selected the list is empty.

Button	Action
Change plan	The window for Changing test plans will be displayed and the selected test plan can be changed.
New Plan	A new plan will be created. Details for this you will find in the quick start guide.
Copy plan	The selected test plan will be copied. You must enter a new name.
Delete plan	After a confirmation dialog the test plan will be deleted permanently if you confirm this.
Plan information	The window for Plan options will be opened. In this mode no changes can be made.
Test	The window **Test plan** will be opened.
Back	The window will be closed.

3.2 Changing test plans

Open the dialog choosing **Test plan** -> **Create / Edit** -> **Change plan**.



On the left side a list with the currently present test steps is displayed. The test steps can be expanded or collapsed.

Button	Action
Edit	This button is available in the case a test step is selected. The window for configuring the test step will be displayed.
Add	A new test step will be created. Details can be found in the quick start guide.
Delete	This button is available in the case a test step is selected. After a confirmation dialog the test step will be deleted permanently.
Copy	This button is available in the case a test step is selected. The test step will be copyed to the

Button	Action
	internal clip board.
Cut	This button is available in the case a test step is selected. After a confirmation dialog the test step will be copied to the internal clip board and then will be deleted permanently.
Paste	This button is available when a test step is present in the internal clip board. This test step will be inserted below the seleted test step. Jump targets of existing test steps will be adapted automatically. The Jump targets of the inserted test step will be set to default values.
Up	This button is available in the case a test step is selected. The selected test step will be moved one position upwards. Jump targets will be adapted automatically.
down	This button is available in the case a test step is selected. The selected test step will be moved one position downwards. Jump targets will be adapted automatically.
Expand	All test steps of the test plan will be expanded. The text changes to **Collapse**.
Collapse	All test steps of the test plan will be collapsed. The text changes to **Expand**.
Test	The window **Test** will be opened.
Close	The window will be closed.
Plan Options	The window for Plan options will be opened. In this mode changes can be done.

3.3 Test types

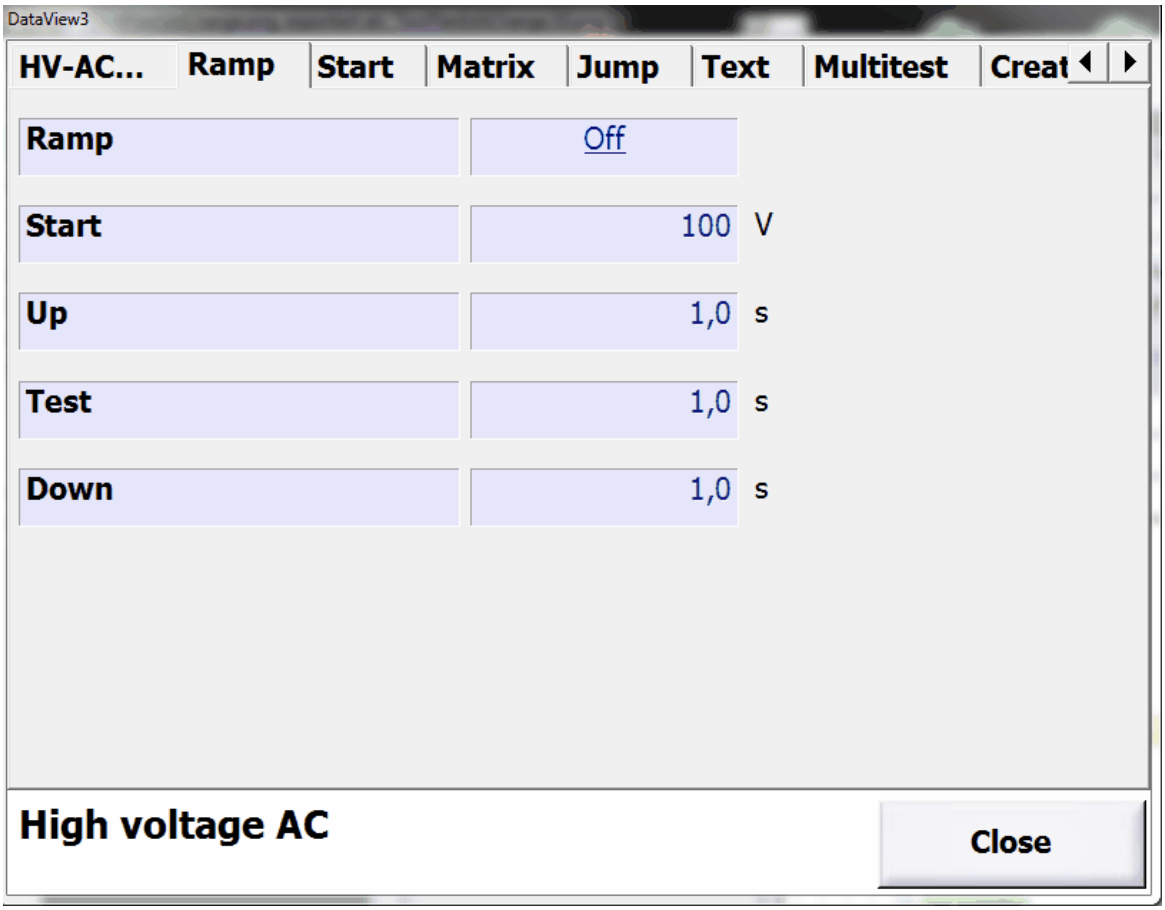
For each test type exists specific parameters and common parameters. The specific parameters are unique for each test type and the common parameters are the same for all test types. Not all common parmeters are present for every test type and may not be present when configuring a single test step.

Common parameters are:
Ramp
Start conditions
Matrix

3.3.1 Common dialogs

3.3.1.1 Ramp

The ramp configuration describes the ramp parameters.



Factroy default is that no ramp is used.

Ramp: Turns the ramp on and off. The other parameters can be changed when ramp is turned on.

Start: Voltage with that the ramp will start.

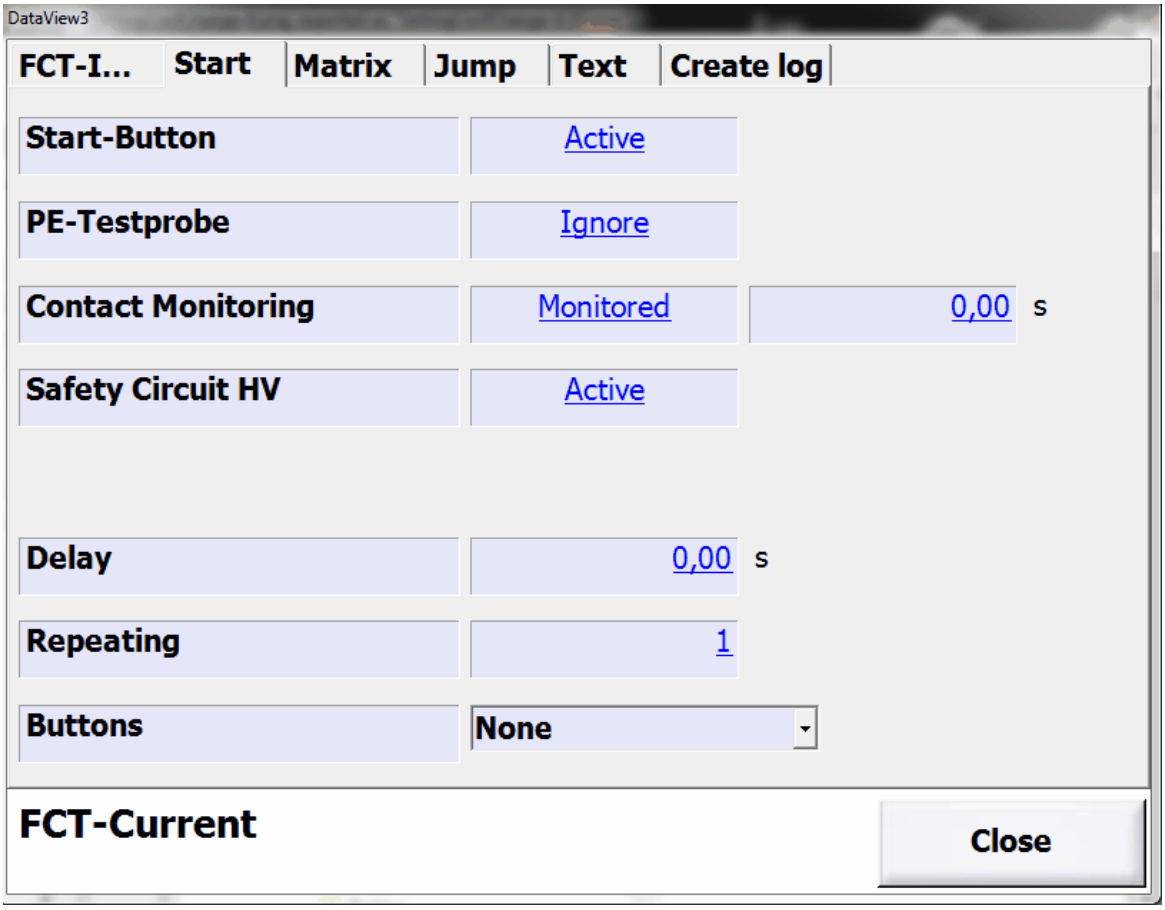
Up: Time in seconds from the start voltage up to the test voltage.

Test: Test time in seconds. This is the time the test voltage is applied to the unit under test. This is the same value a parameter **t** in the configuration dialog.

Down: Time in seconds from the test voltage to the end voltage.

3.3.1.2 Start conditions

The start conditions describe under which cirumstances the test will start.



Each signal can have one of four states.
Active: The signal must be set to provide a start.
Not Active: The signal must not be set to provide a start.
Ignore: The signal will be ignored.
Monitored: The signal must be set. It will be monitored that the signal will be set in the case all other signals with state **Active** are alredy set. Will the signal not be set within the configured time the test will be evaluated as failed and will be aborted. Are multiple signals with state **Monitored** the first signal reaching the time will fail and abort the test.

To select the state **Monitored** at least one other signal must have state **Active**.

Is there only one signal with state **Active** and no other signal has state **Monitored**, the state of that signal cannot be changed.

It is under the responsibility of the test plan editor to choose a combination that makes sense for his scenario.

The signal **Start-Button** allows the start with the **Starttaste** at the front or the signal **Button Start** on the ETL Interface or the **Start** button on the screen.

The signal **PE-Testprobe** allows the start with the button at the PE-Testprobe.

The signal **Contact Monitoring** allows the start with contacting, e. g. with test pistols.

The singal **Safety Circuit HV** allows the start with closing the safety circuit. For the test type **HV-AC** this value is always **Active** and cannot be changed. For the test types **HV-DC** and **ISO** it depends from the settings in the **ATS400**. If the value can be changed. Factory default is the value **Active** and cannot be changed.

Statechange requires that at least one of the signals with state **Active** or **Monitored** must change its state from not set to set to provide a start. When manually contacting the unit under test it ensures that the new test point has been contated. This checkbox is not visible on single test and the first test step in a test plan and is always set.

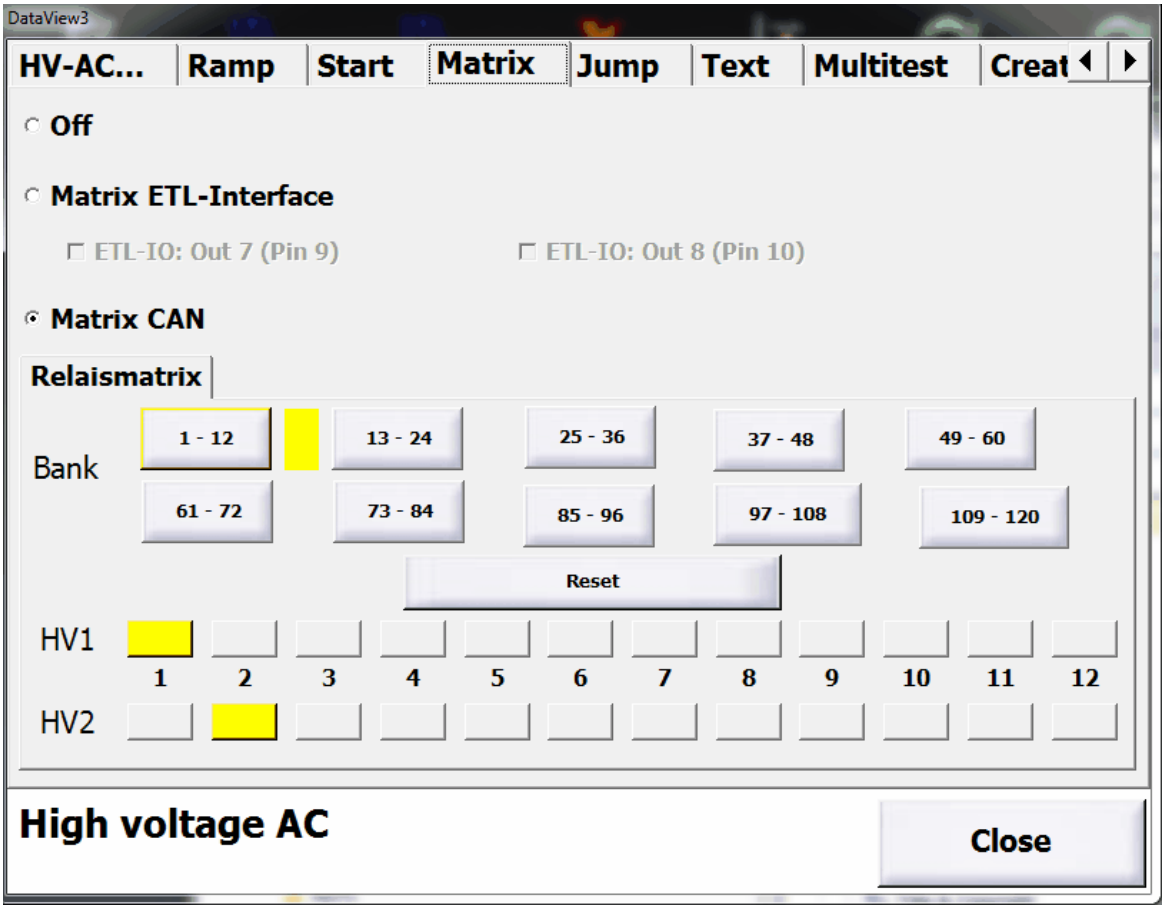
Delay will delay the start of the test after the start conditions are meet.

Repeating allows to execute test steps only once, each time or nth time to execute. Is the value 0 the test step will only be executed once. Is the value 1 it will be executed each time. For all other values the test step will be executed the first time and then be omited for n-1 times. This parameter will not be displayed for single test.

Buttons is a combobox. You have four selections. This combobox is not visible for single test and set to **None**.
None dosn't show any buttons.
Skip allows the tester to omit the current test step. It will be evaluated as passed for the overall result.
Start allows to start the test step.
Start and skip shows the skip and the start button.

3.3.1.3 Matrix

With this property page the settings of a matrix will be configured.



Shown is the dialog in the case a configuration file is present.

Parameter	Description
`Off`	Both outputs of the ETL-Interface are off and all relais of a matrix are in default position.
`Matrix ETL-Interface`	The ETL-Ingterface will be used. This setting is only possible if in `Settings` -> `I/O-Interface` the check box `Disable SC, Con` is active.
`ETL-IO: Out 7 (Pin9)`	This check box determines the state of the output Out7 of the ETL-Interface.
`ETL-IO: Out 8 (Pin10)`	This check box determines the state of the output Out8 of the ETL-Interface.
`Matrix CAN`	This checkbox can be selected in the case a cofiguration file for a matrix is existent. If the checkbox is active the matrix can be configured.

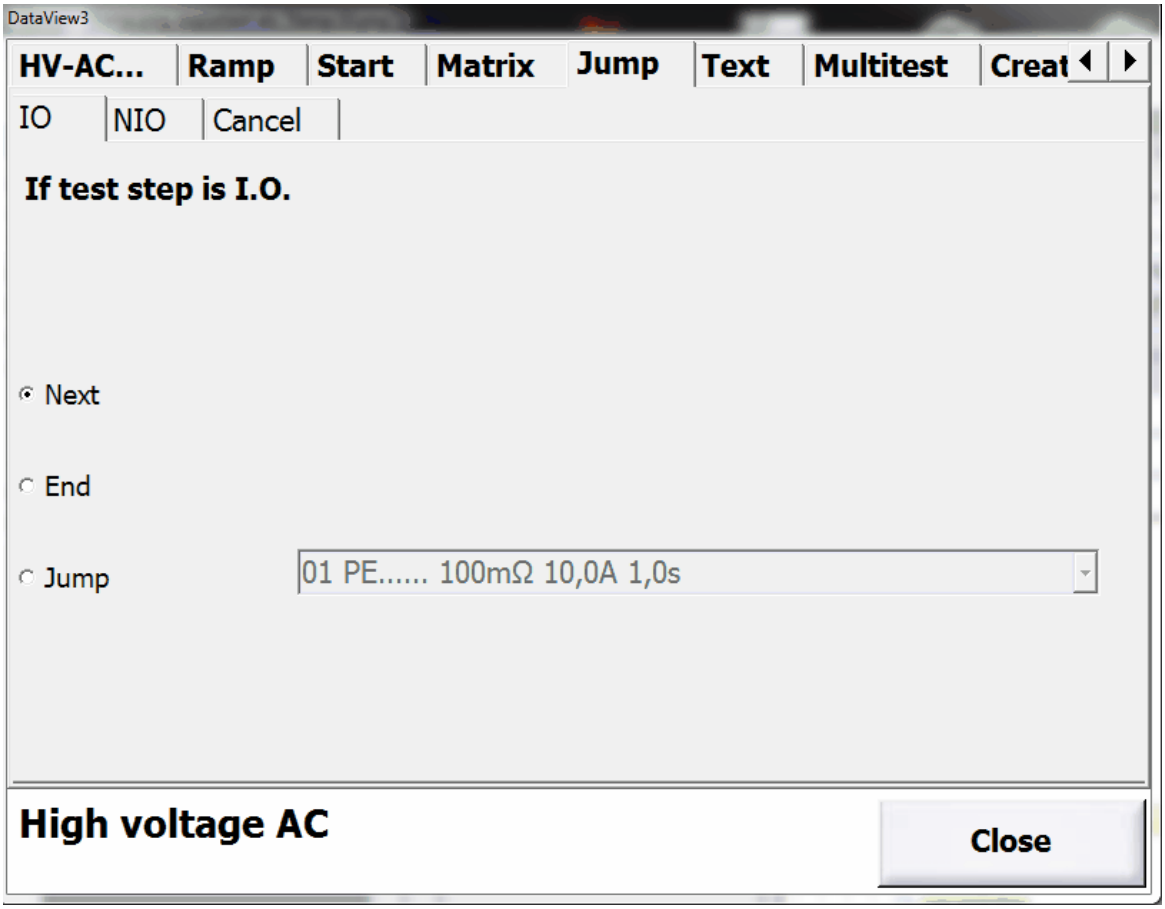
On the sub property page `Relaismatrix` are controls to configure the matrix.

Parameter	Description
Bank	With the buttons it can be switched between the banks of the different outputs. If there is a non default setting in a bank a yellow field will be displayed near the button.
Reset	Sets als outputs to the default setting.
HV1	If a button in this line is set the wire HV1 is switched to the coresponding output.
	In this line the number of the outputs of the active bank are displayed.
HV2	If a button in this line is set the wire HV2 is switched to the coresponding output.

In the example above the output 1 is connected to wire HV1 and output 2 is connected to wire HV2.

3.3.1.4 Jump

On this property page jumps are configured.



On the property page **Jump** conditions can be configured how the test plan will select the next test step. For the test steps can provide thre different results you have one property page for each different result. The settings are the same for each result.

On property page **IO.** you define the target if a test has ended with passed.

On property page **NIO** you define the target if a test has ended with failed.

On property page **Cancel** you define the target ist a test has been aborted.

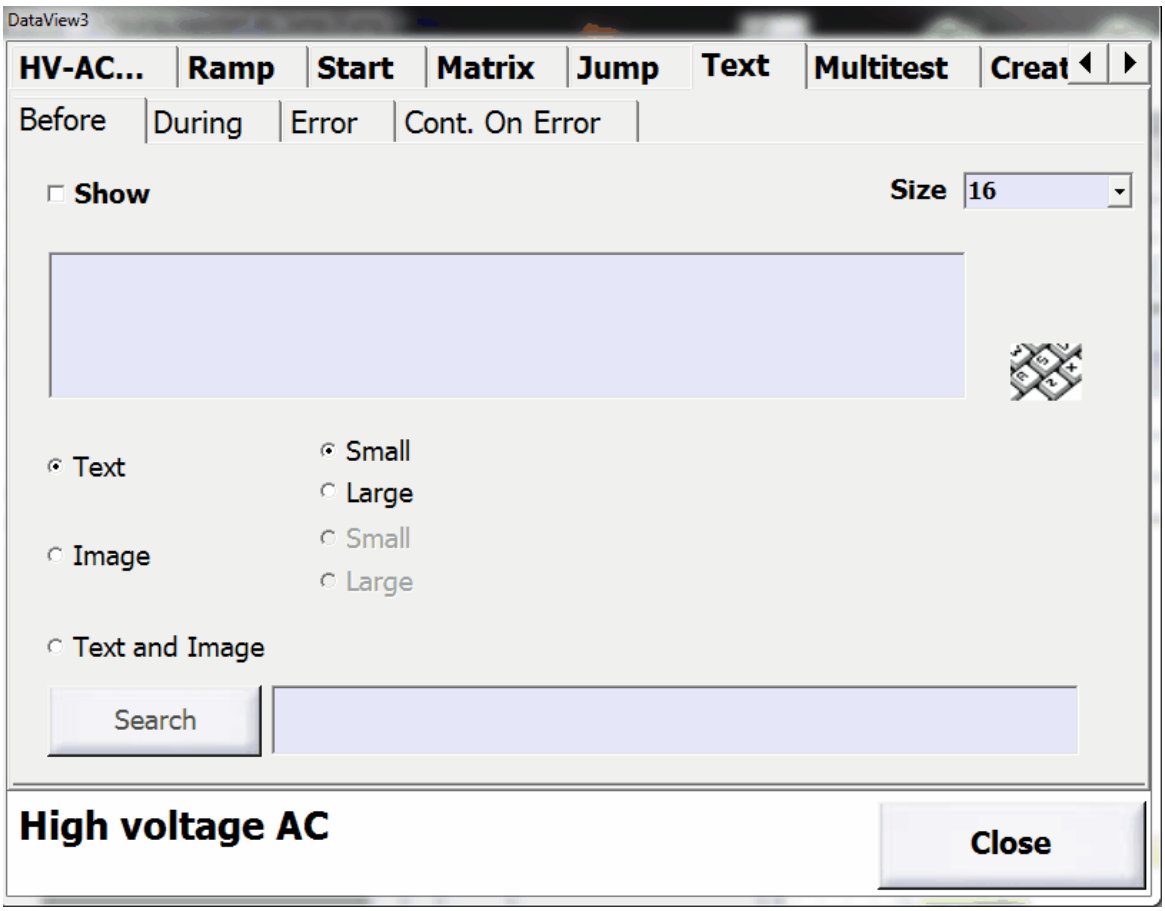
You can select **Next** and the test plan will proceed with the next step.

You can select **End** and the test plan will end.

You can select **Jump** and you can select a test step in the drop down box. The stet plan will proceed with this test step.

3.3.1.5 Text

On this property page user advices are configured.



On the propety page **Text** an text or picture can been shown before, during or on an erroneous test.

The text can be entered by a click on the white edit box and activated by setting the checkbox **Show**. The hight of the font can be changed in the drop down box.

Will an advice been shown **Before** it will be visible until the start conditions are meet.

Will an advice been shown **During** a test it will be visible until the test step ends.

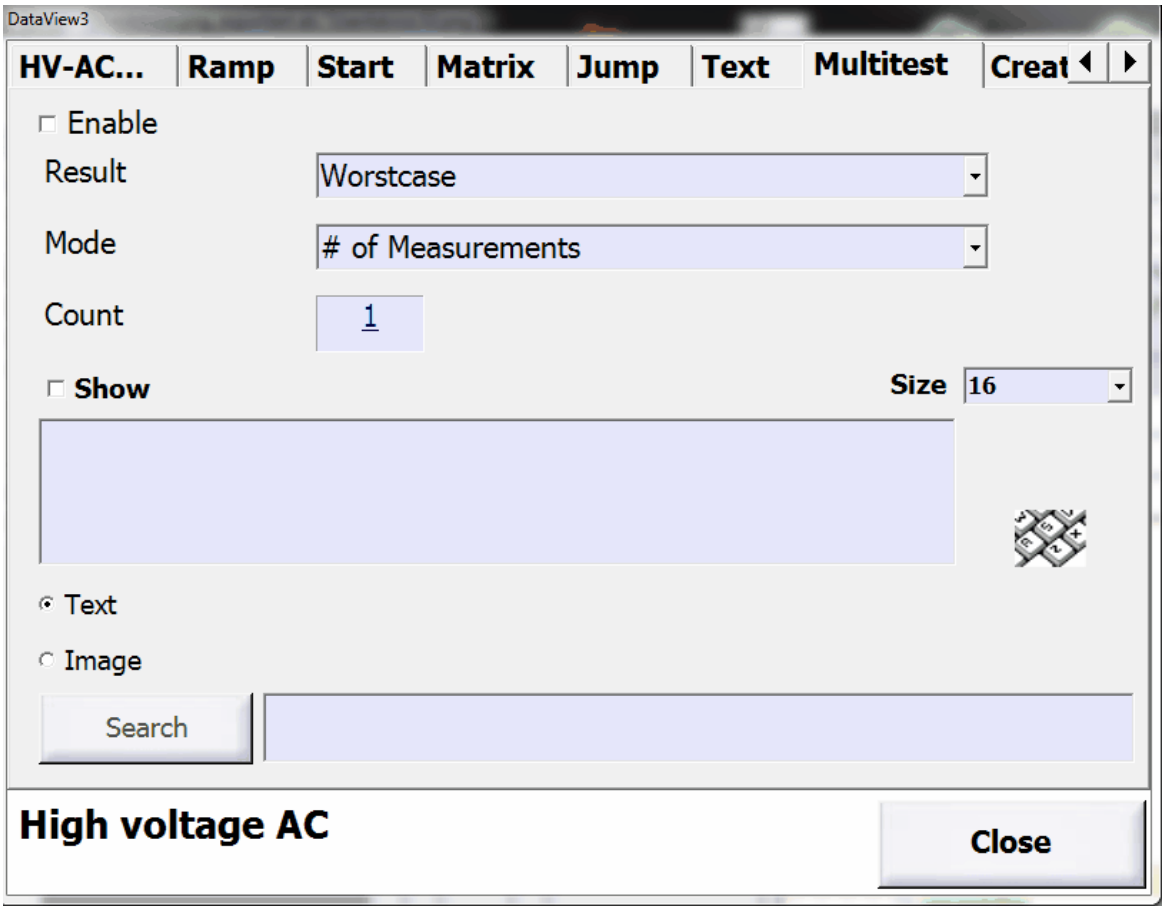
Will an advice been shown on **Error** it will be visible until the dialog will be confirmed.

On **Cont. On Error** you can configure when the advice on **Error** will be confirmed. You can use the same conditions as for start conditions.

On variant **ATS400 X4** there isn't the possibility to use pictures. The corresponding controls aren't visible.

3.3.1.6 Multitest

On this property page the multi test parameters are configured.



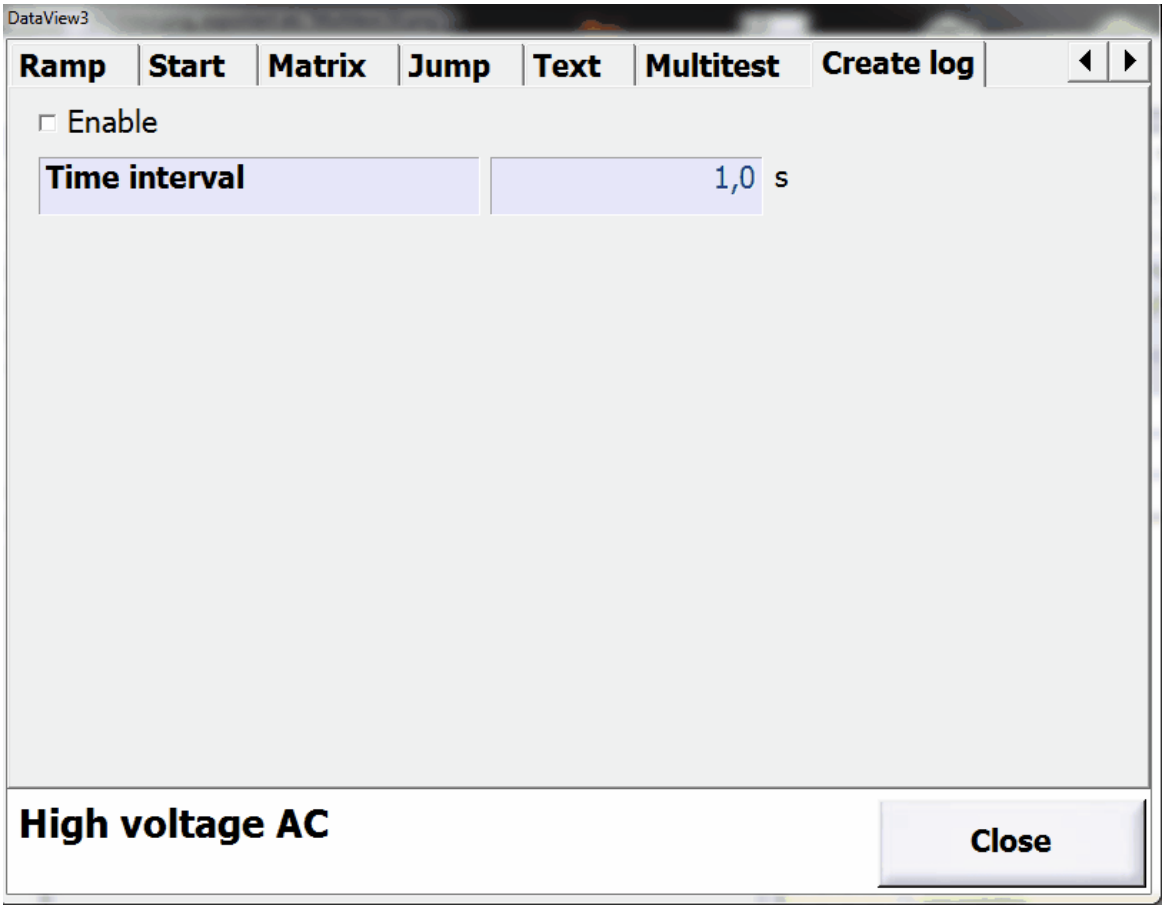
To summarize multiple test points into one result, e. g. the number of test points is different for different units under test, you can use **Multitest**.

Parameter	Description
Enable	Enables multi test behaviour.
Result	Configures how the results of the test are summarized. **Worstcase**: The worst measurement will be used.
Mode	Configures the end of a multi test. **# of Measurements**: You must have the numer of tests with result passed as given in **Count**. **Button Pass**: The multi test ends when the pass button is pressed. It dosn't matter if this is coming from the front of the **ATS400**, the button on the screen or from the ETL-Interface.
Count	Configures how much tests must be done when used in mode **# of Measurements**. This parameter is only be visible when in **Mode** the value **# of Measurements** is selected.
Pass button visible	Configures to show the button **Pass** on the screen. This parameter is only be visible when in **Mode** the value **Button Pass** is selected.
Show	Configures that a user advice will be shown between two tests of a multi test.
Size	Configures the hight of the font of the text of the user advice.
	Text of the user advice.
Text	The text will be shown as user advice.
Image	A picture will be shown as user advice.
Search	Shows the file select dialog to select the picture. This button is available when **Image** is selected.

On variant **ATS400 X4** there isn't the possibility to use pictures. The corresponding controls aren't visible.

3.3.1.7 Create log

On this property page the logging is configured.



To log measurements during a test logging can be activated.

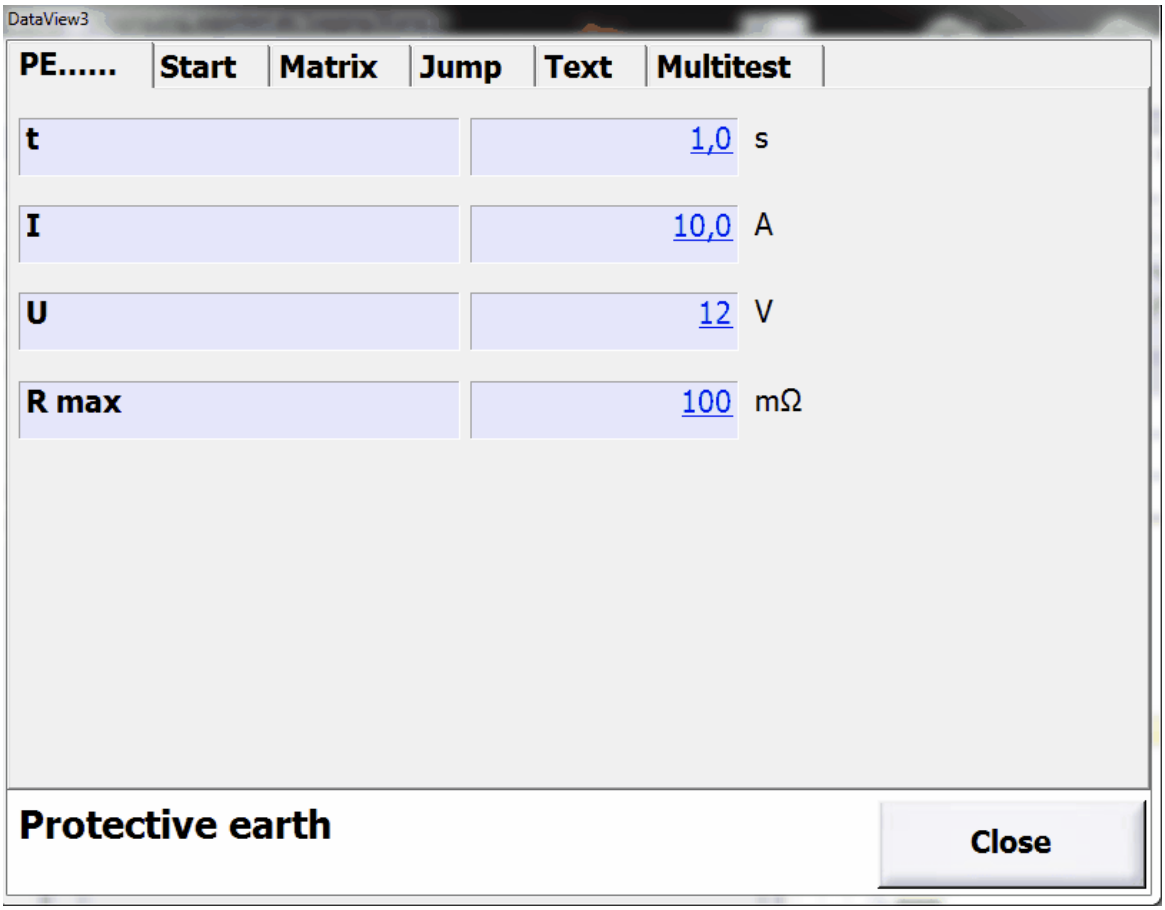
Parameter	Description
Enable	Activates the logging.
Time interval	Configures how often measurements are stored.

For each test step a file will be created. The rule for the base name is according to the result file. The number of the test step is added to the base name.

The file is a test file in csv-format and can be imported to other applications. The exact format depends on the test type.

3.3.2 Protective Earth test

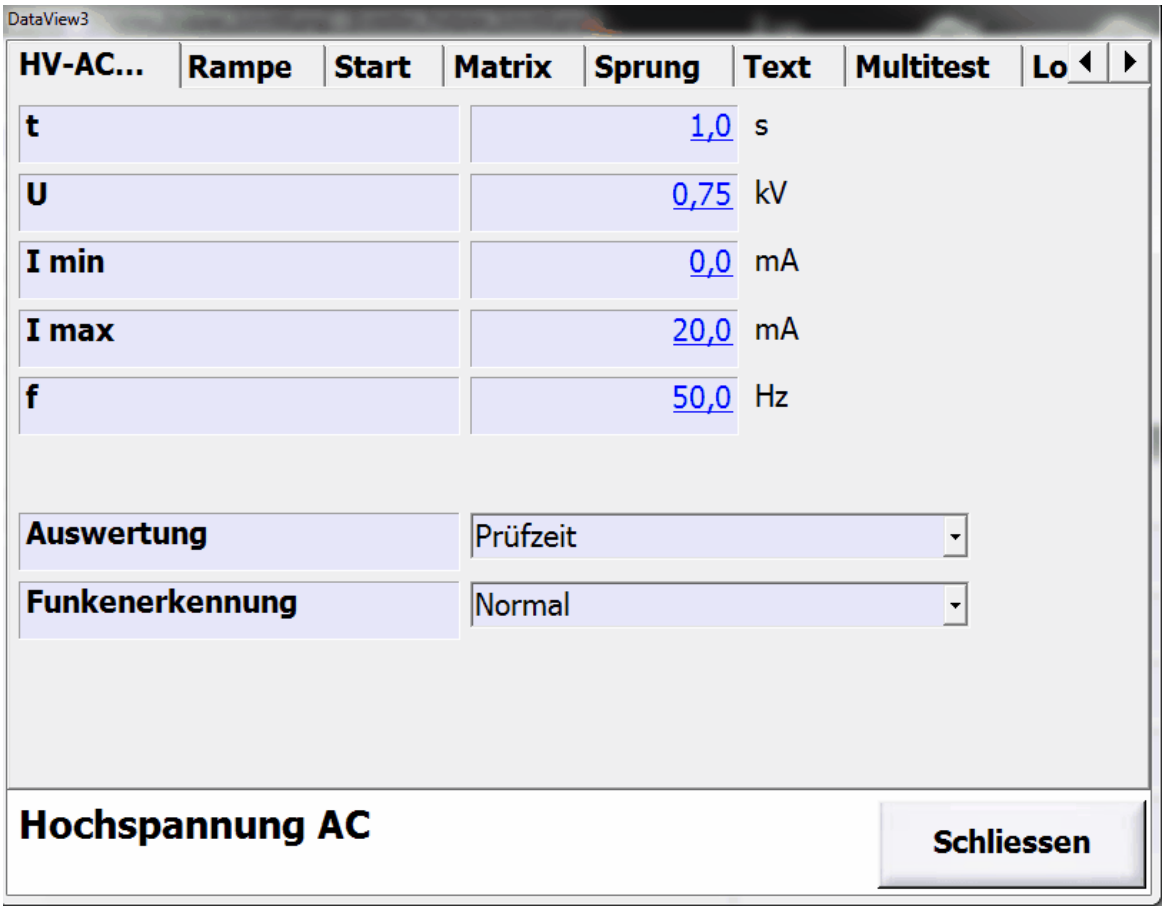
The protective earth test will be configured using the following dialog.



Parameter	Description
t	Test time in seconds. The test time is the time the current is flowing through the unit under test.
I	Test current in A. This current is flowing through the unit under test for the test time.
U	Open circuit voltage in Volt. This voltage is applied to the unit under test or the contacts in the case no current is flowing through the unit under test.
R max	Maximum allowed resistance for evaluation.

3.3.3 High voltage AC

The high voltage AC test will be configured using the following dialog.



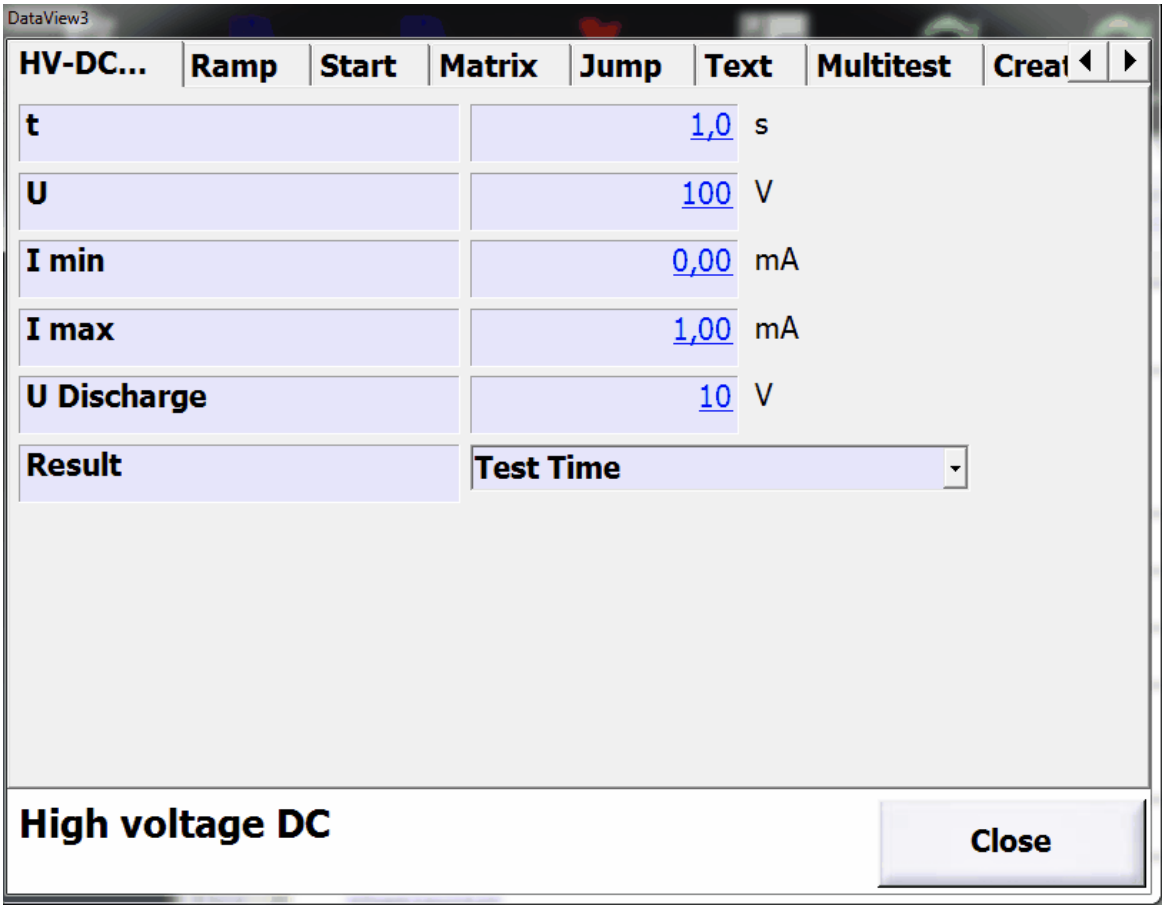
Parameter	Description
t	Test time in seconds. The test time is the time the testing voltage is applied to the unit under test. The times for powering on and off and the ramp times are not part of the test time.
U	Testing voltage in kilovolt. This voltage is applied to the unit under test for the test time.
I min	Minimum test current. This current must be flowing through the unit under test during the test time. If the current fallse below this limit the test is evaluated as not ok.
I max	Maximum test current. The current must not exceed this limit during the test time. If the current exceeds this limit the test will be evaluated as not ok.
f	Frequency in Hertz. Frequency of the testing voltage.
Result	You can select how the evaluation is done. Selecting Test

Parameter	Description
	Time the test ends after the test time. Selecting **Start-Button** the evaluation ends with pressing the start button again.
Sparc detection	This parameter will only be visible when the **ATS400** is supporting this function. You can select if spark detection is disabled resp. how sensitive it is. Spark detection evaluates the break down of the measured voltage regarding to size and gradient. Selecting **Off** spark detection is disabled. Selecting **Coarse** a large spark will be detected, selecting **Normal** the sensitivity is medium and selecting **Fine** small sparks will be detected.

Additional informations about the behaviour of the high voltage test, the error messages and the evaluation you will find in the Reference.

3.3.4 High voltage DC

The high voltage DC test will be configured using the following dialog.

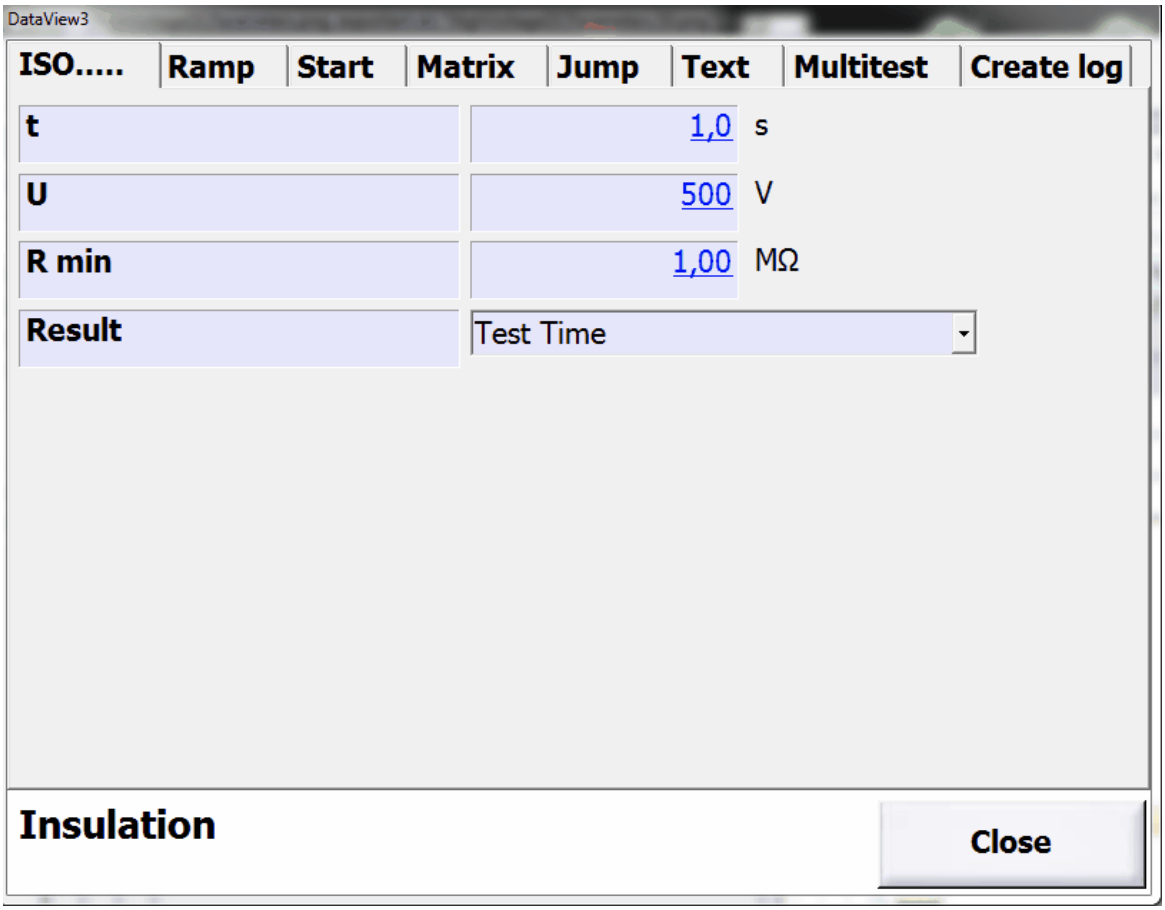


Parameter	Description
t	Test time in seconds. The test time is the time the testing voltage is applied to the unit under test. The times for powering on and off and the ramp times are not part of the test time.
U	Testing voltage in Volt. This voltage is applied to the unit under test for the test time.
I min	Minimum test current. This current must be flowing through the unit under test during the test time. If the current fallse below this limit the test is evaluated as not ok.
I max	Maximum test current. The current must not exceed this limit during the test time. If the current exceeds this limit the test will be evaluated as not ok.
Result	You can select how the evaluation is done. Selecting **Test Time** the test ends after the test time. Selecting **Start-Button** the evaluation ends with pressing the start button again.
U Discharge	Discharge voltage is the voltage which must be fallen short of after the test before the test step ends.
Sparc detection	This parameter will only be visible when the **ATS400** is supporting this function. You can select if spark detection is disabled resp. how sensitive it is. Spark detection evaluates the break down of the measured voltage regarding to size and gradient. Selecting **Off** spark detection is disabled. Selecting **Coarse** a large spark will be detected, selecting **Normal** the sensitivity is medium and selecting **Fine** small sparks will be detected.

Additional informations about the behaviour of the high voltage test, the error messages and the evaluation you will find in the Reference.

3.3.5 Insulation test

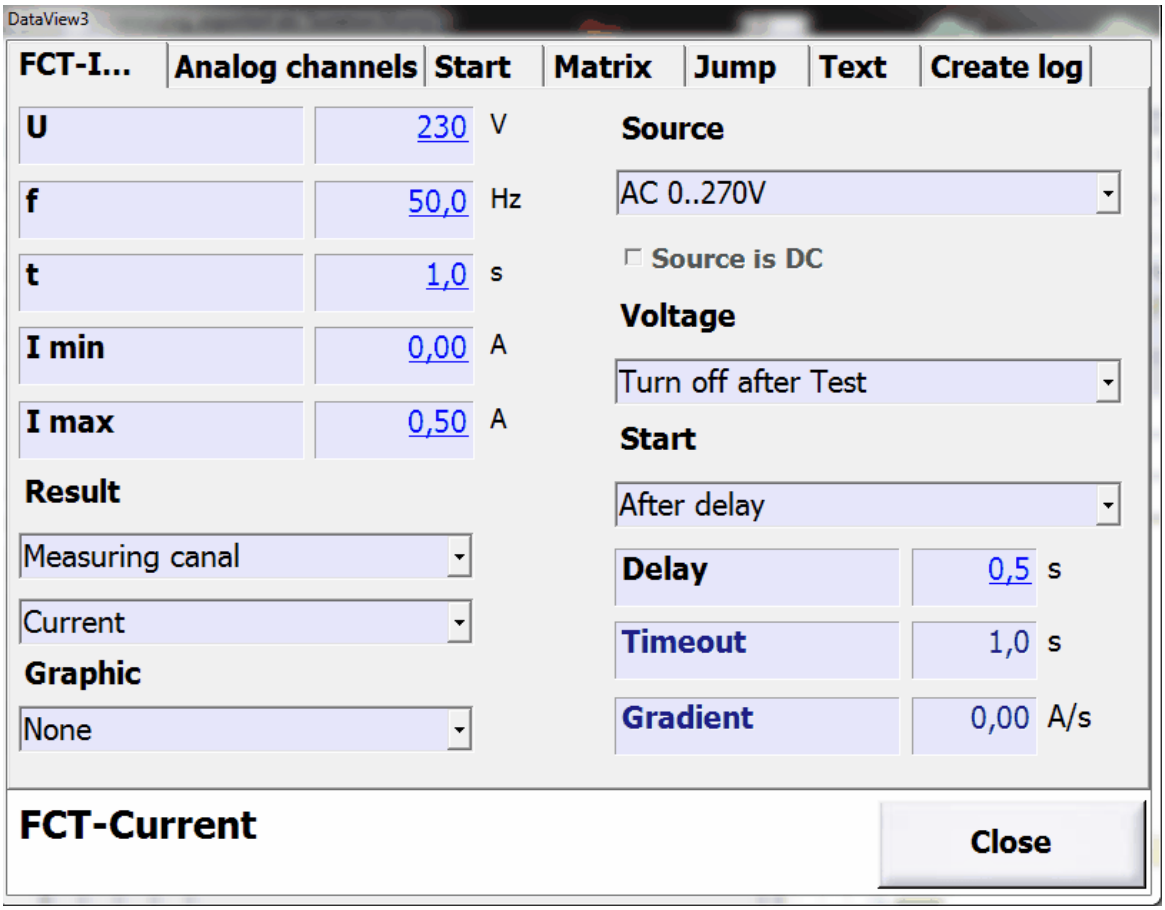
The insulation test will be configured using the following dialog.



Parameter	Description
t	Test time in seconds. The test time is the time the testing voltage is applied to the unit under test. The times for powering on and off and the ramp times are not part of the test time.
U	Testing voltage in Volt. This voltage is applied to the unit under test for the test time.
R min	Minimung allowed resistance for the evaluation.
Result	You can select how the evaluation is done. Selecting Test Time the test ends after the test time. Selecting Start-Button the evaluation ends with pressing the start button again.

3.3.6 Function test

The function test will be configured using the following dialog.



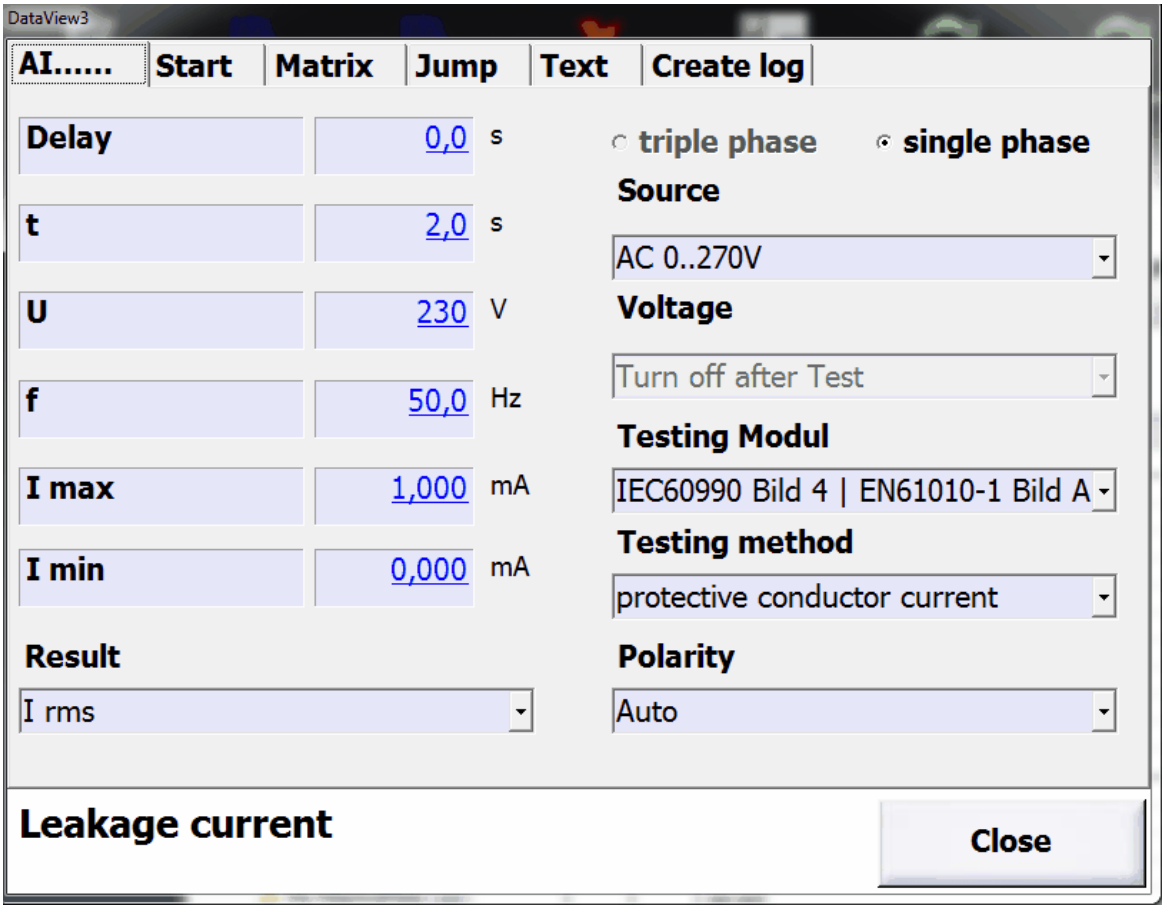
Parameter	Description
U	Test voltage in Volt. This voltage is applied to the unit under test. This parameter will be ignored if the source is external.
f	Frequency of the test voltage. This parameter will be ignored if the source is a direct current source or external.
t	Test time in seconds. The test time is the time the evaluation is done against the limits. This time starts after the conditions for evaluation start is meet. This parameter will be ignored when Button Pass/Fail is selected.
I min	Minimum current. Is the current below this limit the test is evaluated as failed. This parameter will be shown when Current is selected as measuring channel. This parameter will be ignored when Button Pass/Fail is selected.
I max	Maximum current. Is the current above this limit the test is

Parameter	Description
	evaluated as failed. This parameter will be shown when **Current** is selected as measuring channel. This parameter will be ignored when **Button Pass/Fail** is selected.
U min	Minimum voltage. Is the voltage below this limit the test is evaluated as failed. This parameter will be shown when **Current** is not selected as measuring channel. This parameter will be ignored when **Button Pass/Fail** is selected.
U max	Maximum voltage. Is the voltage above this limit the test is evaluated as failed. This parameter will be shown when **Current** is not selected as measuring channel. This parameter will be ignored when **Button Pass/Fail** is selected.
Result	Here are two entries possible. In the the upper drop down box the method can been choosen. You can select between **Measuring canal** und **Button Pass/Fail**. In the lower drop down box the channel for evaluation is selected when **Measuring canal** is selected. Is **Button Pass/Fail selected** as method no evaluation is done and the parameters **I min**, **I max**, **U min**, **U max** and the paremeters for **Start** will be ignored.
Graphic	You can select if a graphic will be diplayed and if it will be stored. Selecting **None** no graphic will be displayed and stored. Selecting **Show only** the graphic will only be displayed. **Selecting Show and Save** the graphic will be shown and saved.
Source	Source for suppling the unit under test. The possible sources are dependent from your device. Is an external source selected you can configure if the source is a direct current source with the checkbox **Source is DC**.
Voltage	Drop down box how the supplyment of the unit under test is to handle. Selecting **Turn off after test** the voltage will be turn off when test has finished. Selecting **Leave on after test** the voltage will remain on when the test has finished. Selecting **Turn off** dosn't do a test. Only the voltage will be turned off. Selecting **Turn off if test N.I.O.** the voltage will be turned off when the test is evaluated as failed. Selecting **Turn on** dosn't do a test. Only the voltage will be turned on.
Start	Setting when the evaluation against the limits will start. This parameter and the dependent parameters will be ignored when **Result** ist set to **Button Pass/Fail**. With the setting **After Delay** the evaluation begins after the time in **Delay** has passed. With the seting **> min** the evaluation begins when the measurement is above the limit in **I min** rsp. **U min**. With the setting **Delay and > min** the

Parameter	Description
	time in **Delay** must have passed and the measurement is above the limit in **I min** rsp. **U min**. With the setting **Gradient** the gradinet of the measurements must have fallen below the value in **Gradient**. With the setting **< max** the evaluation begins when the mesurement has fallen below the limit in **I max** rsp. **U max**. With the setting **Delay und < max** the time in **Delay** must ahve passed and the measurement is fallen below the limit in **I max** rsp. **U max**. With the setting **> min**, **Gradient** and **< max** the evaluation must start before expiring the time in **Timeout**. Otherwise the test is evaluated as failed.

3.3.7 Leakage current test

The leakage current test will be configured using the following dialog.



These parameters are relevant for checking.

Parameter	Description
Delay	This parameter is not used.

Parameter	Description
t	Time used for checking against the limits. If you are using a polarity with automatic change the time is valid for each polarity.
I max	Maximum allow leakage current.
I min	Minimum leakage current which must be reached.
Result	Type of the channel. There are the following selesctions: **I AC rms**: Effective value of the AC-fraction **I DC**: DC-fraction of the leakage current **I min**: Lowest value of the current leakage current **I max**: Highest value of the current leakage current **I rms**: Effective value of the DC- and AC-fraction

These parameters are relevant for suppling the unit under test.

Parameter	Description
U	Voltage the device under test will be supplied.
f	Frequency of the supply voltage for the device under test.
triple phase	The unit under test is supplyed with triple phase. This radio button is active only on a test rig configured for such units under test.
sisngle phase	Teh unit under test is supplyed with a single phase.
Source	There are several sources available. The sources are explained in detail in chapter Supply options. Source for the supply of the device under test. **Mains voltage**: The supply is taken from the mains voltage of the ATS400. **AC 0..270V**: The supply is taken from the power converter of the ATS400. **External**: The supply is taken from an external source.
Voltage	Defines how after a test the supply for the device under test is handeled. **Turn off after Test**: After the test the supply will be turned off. This setting is fixed and cannot be changed.

These parameters are relevant for the test setup.

Parameter	Description
Testing Modul	There are several testing moduls available. the testing modules are explained in detail in chapter Testing modules. **IEC 60990 Pic 3**: Unweighted touch current **IEC 60990 Pic 4**: Touch current weighted for reaction **IEC 60990 Pic 5**: Touch current weighted for to let loose

<table>
<tr><td>Parameter</td><td>Description</td></tr>
<tr><td></td><td>IEC 60601 Basic: Unweighted leakage current
IEC 60601 Pic 12: Weighted leakage current</td></tr>
<tr><td>Testing method</td><td>Selects which testing method will be used.
Protective conducter current: The current in the protective conducter will be meassured. This method is named earth leakage current in EN 60601-1:2013-12.
Touch current: The current over the housing will be measured. For this measurement the PE-probe must be used. This method is named contact current in EN 60601-1:2013-12.</td></tr>
<tr><td>Polarity</td><td>Determines the connection of the unit unde rtest and the test setup. The contacting depends form the testing method. The contacting for the protective conducter current are explained in chapter Polarity for protective conducter, for the touch current in chapter Polarity for touch current.

In some selections the word „Auto“ is used. With this setting the change of the polarity is done automatically within one test step.

Using testing method Protective conductor current following connections are available:

Auto
<table><tr><td>n/S1</td><td>p/S5</td></tr><tr><td>Closed</td><td>Normal/Switched</td></tr></table>
L1->PE
<table><tr><td>n/S1</td><td>p/S5</td></tr><tr><td>Closed</td><td>Normal</td></tr></table>
L2-> PE
<table><tr><td>n/S1</td><td>p/S5</td></tr><tr><td>Closed</td><td>Switched</td></tr></table>
Auto with SFC
<table><tr><td>n/S1</td><td>p/S5</td></tr><tr><td>Open</td><td>Normal/Switched</td></tr></table></td></tr>
</table>

Parameter	Description

L1->PE with SFC

n/S1	p/S5
Open	Normal

L2-> PE with SFC

n/S1	p/S5
Open	Switched

Using testing method **touch current** following connections are available:

Auto

n/S1	p/S5	e/S7
Closed	Normal/Switched	Closed

L1->PE

n/S1	p/S5	e/S7
Closed	Normal	Closed

L2-> PE

n/S1	p/S5	e/S7
Closed	Switched	Closed

Auto with SFC

n/S1	p/S5	e/S7
Open	Normal/Switched	Closed

L1->PE with SFC

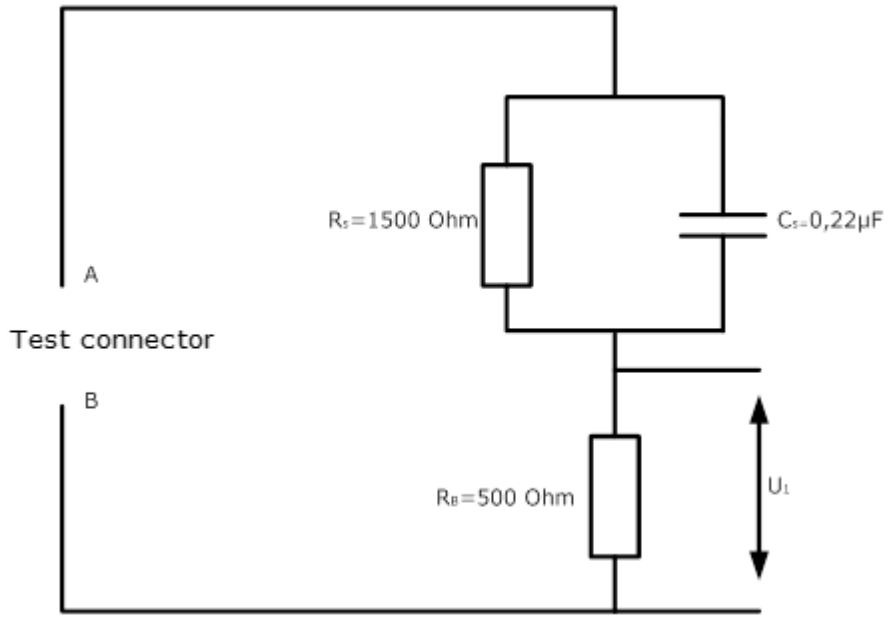
n/S1	p/S5	e/S7
Open	Normal	Closed

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
L2-> PE with SFC
<table>
<tr><td>n/S1</td><td>p/S5</td><td>e/S7</td></tr>
<tr><td>Open</td><td>Switched</td><td>Closed</td></tr>
</table>
SFC PE Open Auto
<table>
<tr><td>n/S1</td><td>p/S5</td><td>e/S7</td></tr>
<tr><td>Closed</td><td>Normal/Switched</td><td>Open</td></tr>
</table>
SFC PE Open
<table>
<tr><td>n/S1</td><td>p/S5</td><td>e/S7</td></tr>
<tr><td>Closed</td><td>Normal</td><td>Open</td></tr>
</table>
SFC PE Open reverse
<table>
<tr><td>n/S1</td><td>p/S5</td><td>e/S7</td></tr>
<tr><td>Closed</td><td>Switched</td><td>Open</td></tr>
</table>
</td></tr>
</table>

3.3.7.1 Testing modules

IEC60990 Pic 3

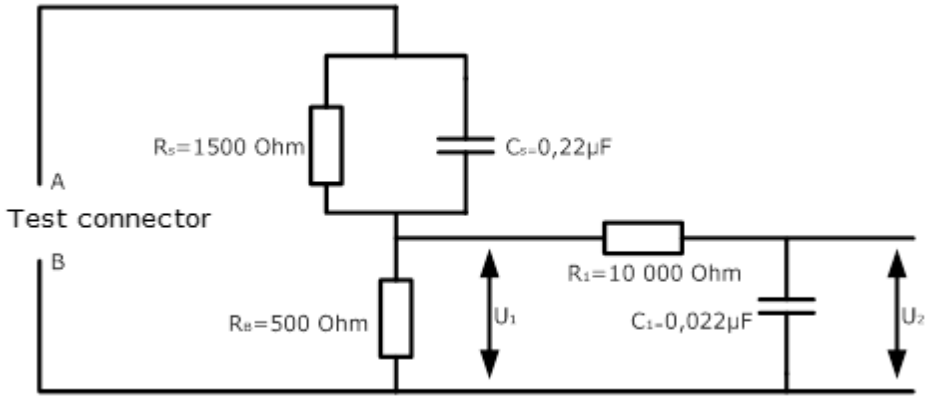
Measuring circuit for unweighted touch current (corresponds EN61010-1 Pic A.3)



This measuring model emulates the impedance of the human body. This allows sto measure the current flowing through a human body touching the unit under test in a similar way.

IEC60990 Pic 4

Measuring circuit for touch current weighted for reaction (corresponds EN61010 Pic A1)

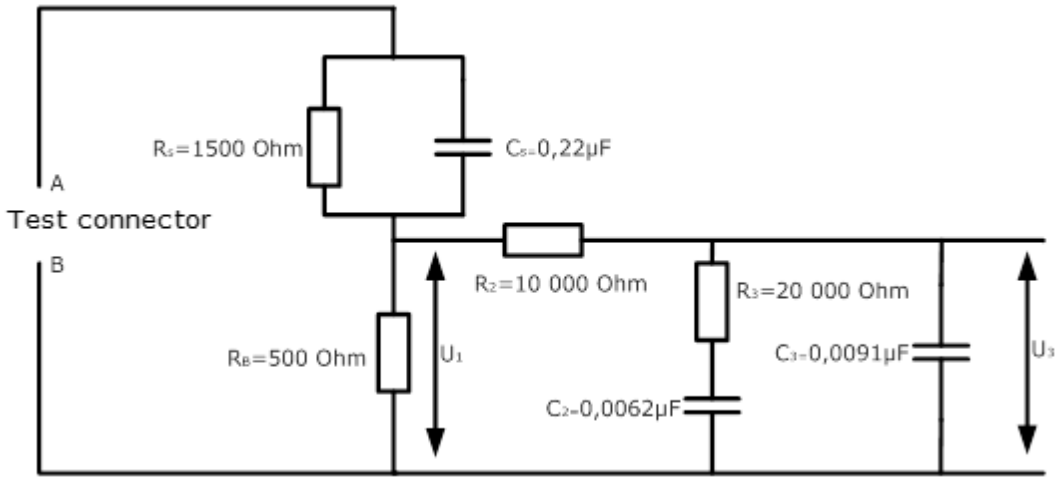


Reaction in the human body results from the current flowing within the body. The measuring circuit according to picture 4 emulates the impedance of the body and

weight the reaction depended from the current causing an unwanted reaction.

IEC60990 Pic 5

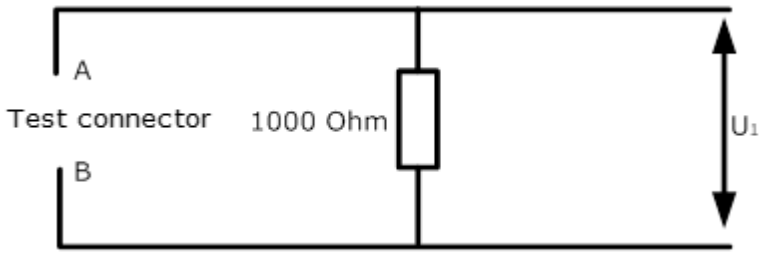
Measuring circuit for touch current weighted for let loose



The inability to let loose the unit under test results from a current flow within the human body (e.g. through muscles). the influence of the frequency for let losse is different from the influence for reaction. this is significant for frequencies above 1 kHz.

IEC 60601 Basic

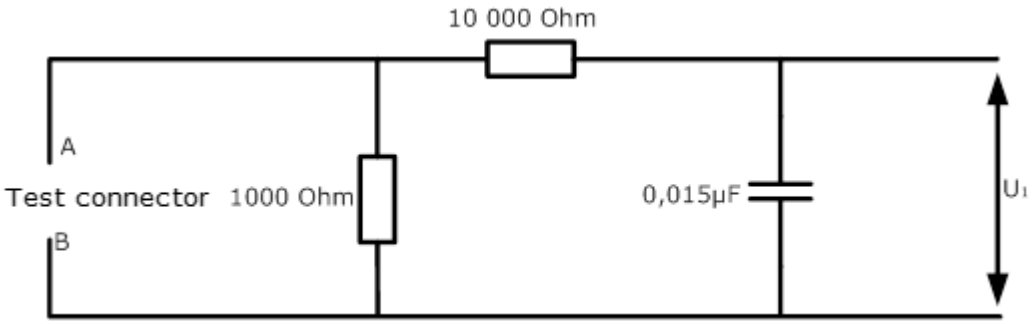
Measuring circuit



This measuring circuit corresponds to the requirement of DIN EN 60601-1:2013-12 chapter 8.7.3 part e.

IEC 60601 Pic 12

Measuring circuit with weighting

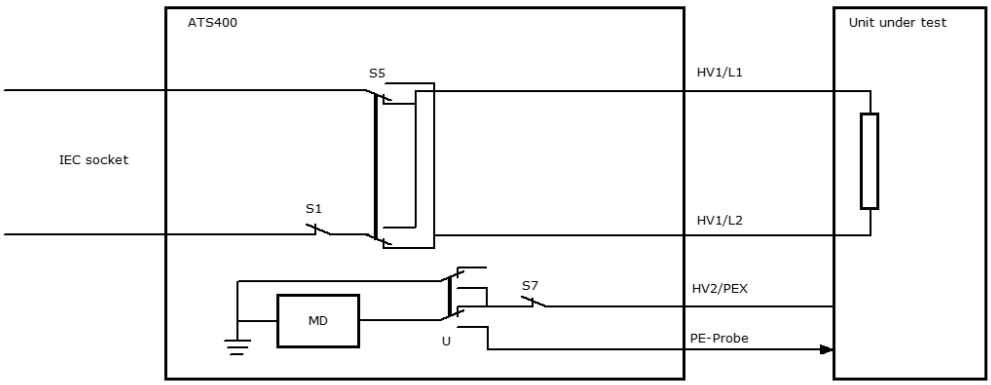


This measuring circuit corresponds to the requirement of DIN EN 60601-1:2013-12 chapter 8.7.3 part a - d.

3.3.7.2 Supply options

Mains voltage

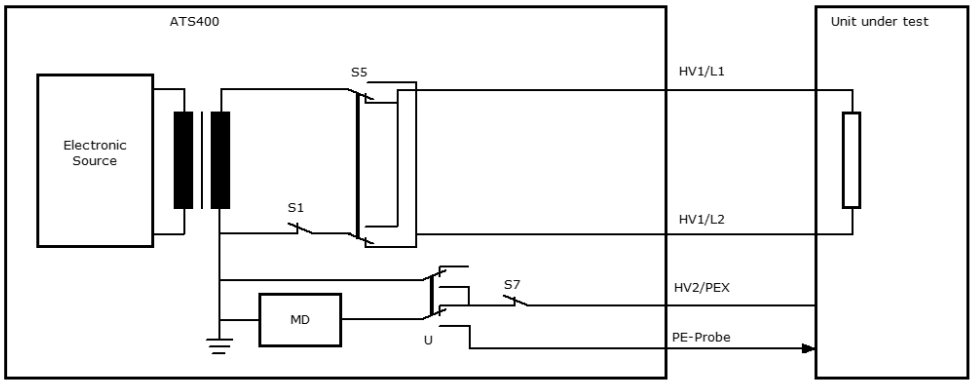
The unit under test is supplied from the mains voltage of the ATS400.



There is no isolation from the mains voltage.

AC 0..270V

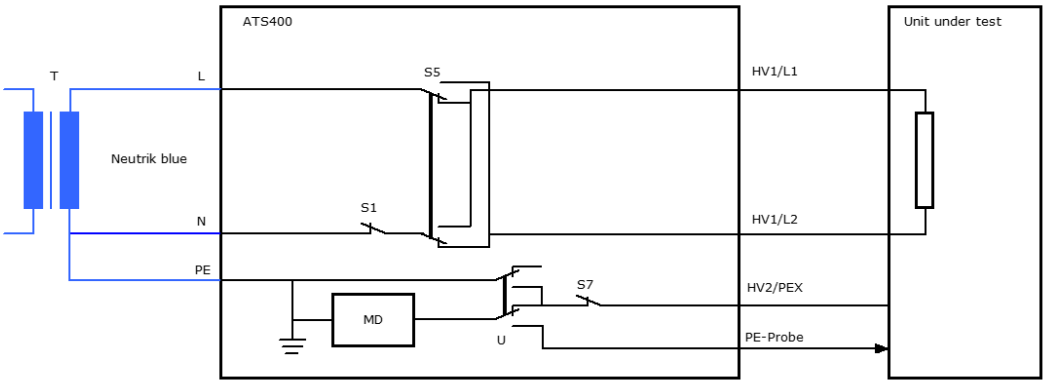
The unit under test is supplied by the power converter in the ATS400.



The isolation is within the ATS400.

Extern

The unit under test is supplied over an external input.

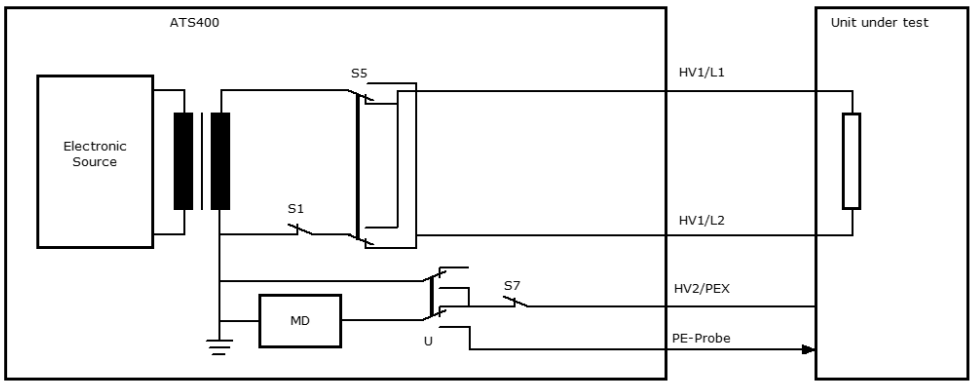


An insulation can be done by an external transfomer.

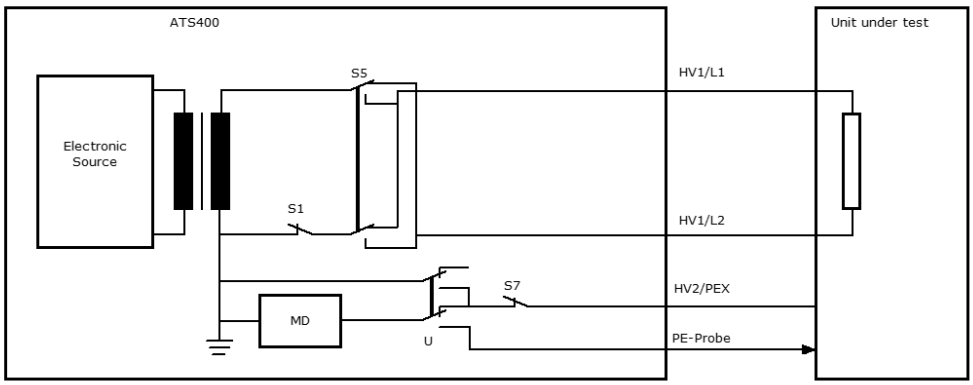
3.3.7.3 Polarity for protective conducter

The following polarities are available with the measuring method **protective conducter current**.

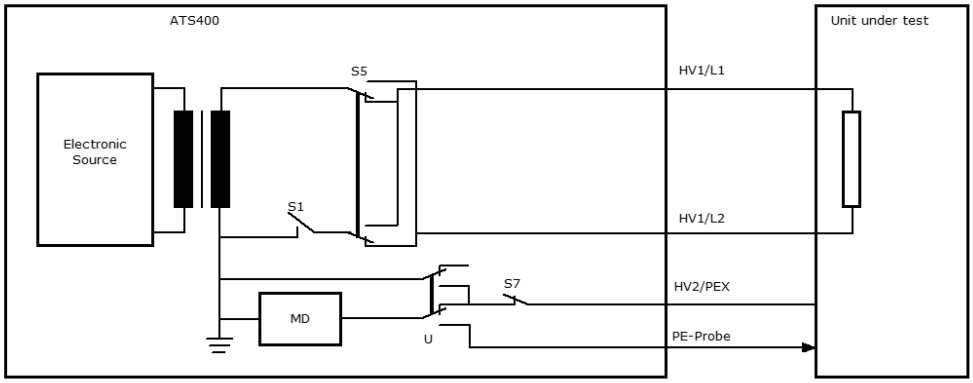
L1->PE resp. 1. phase **Auto**



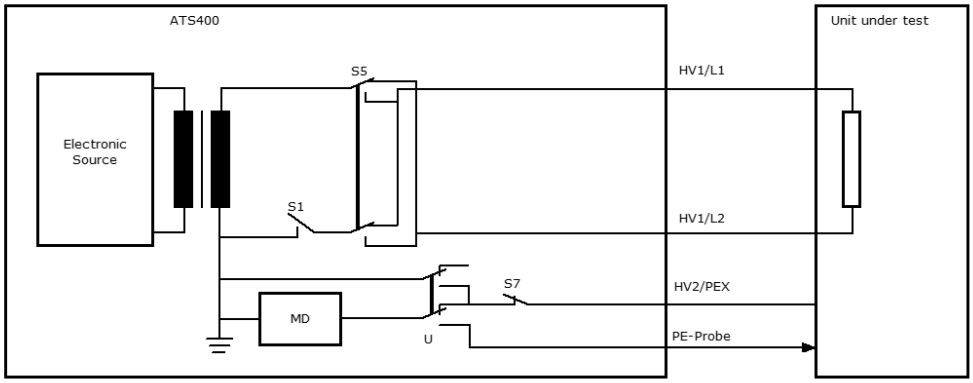
L2->PE resp. 2. phase **Auto**



L1->PE with SFC resp. 1. phase **Auto with SFC**



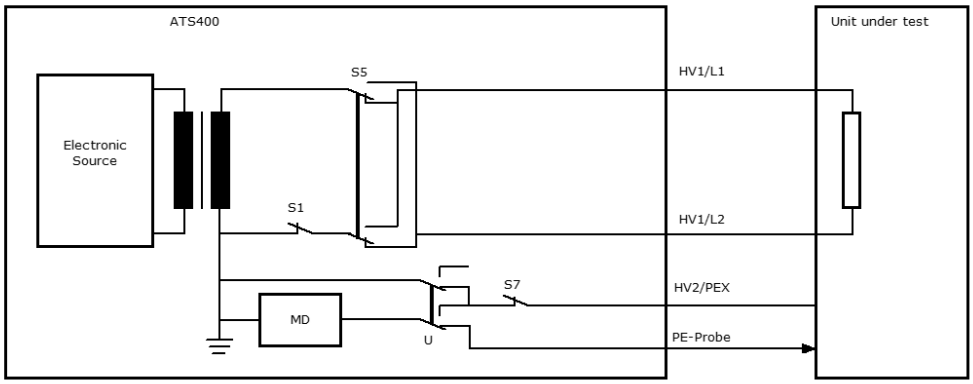
L2->PE with SFC reap. 2. phase **Auto with SFC**



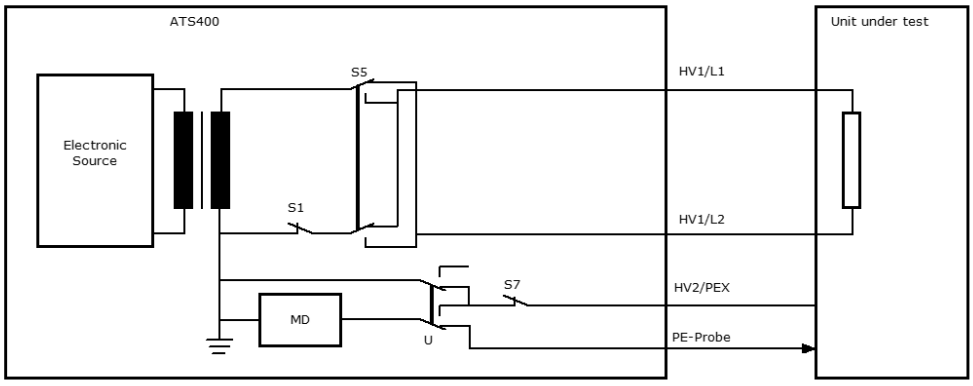
3.3.7.4 Polarity for touch current

The following polarities are available with the measuring method **touch current**.

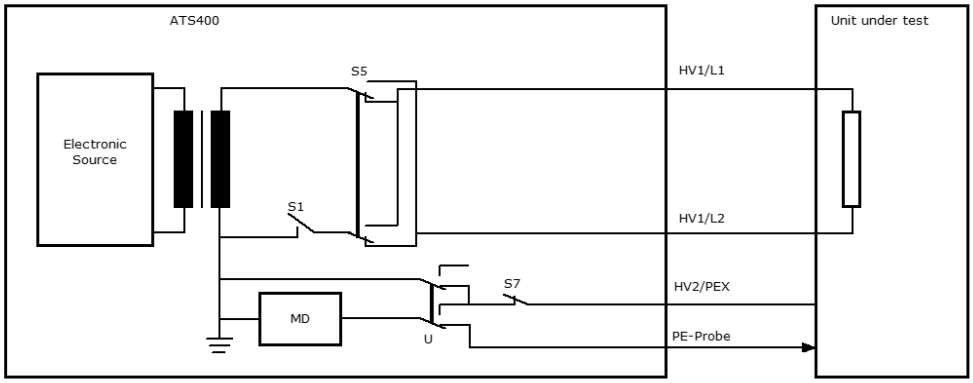
L1->PE resp. 1. phase **Auto**



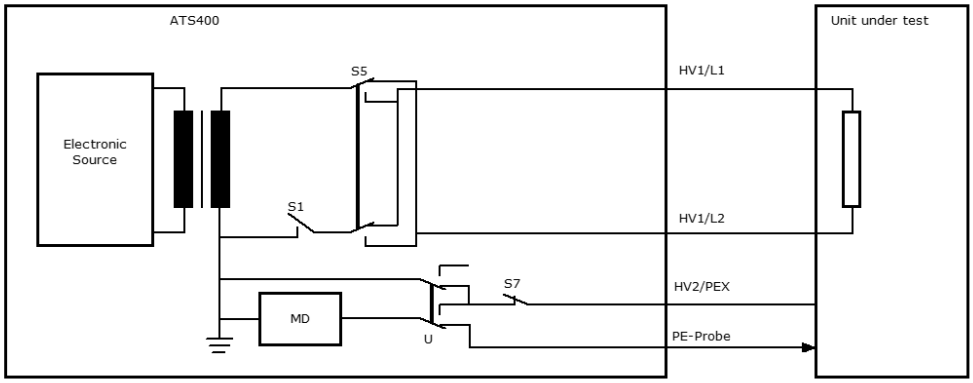
L2->PE resp. 2. phase **Auto**



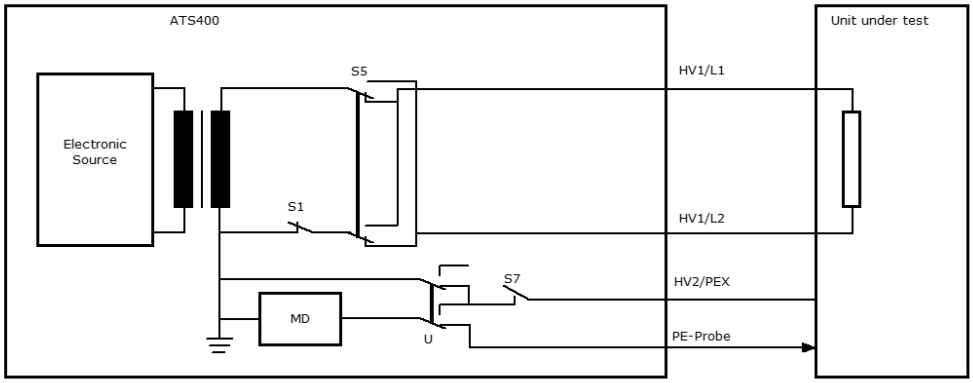
L1->PE with Auto resp. 1. phase **Auto with Auto**



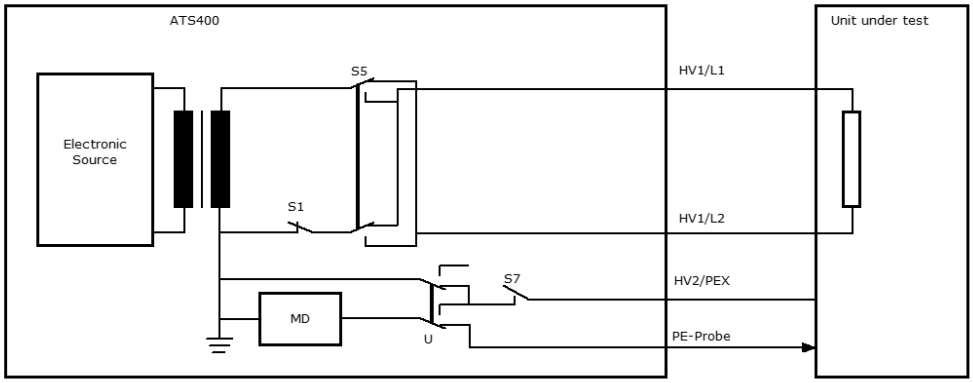
L2->PE with Auto resp. 2. phase **Auto with Auto**



SFC PE Open resp. 1. phase **SFC PE Open Auto**

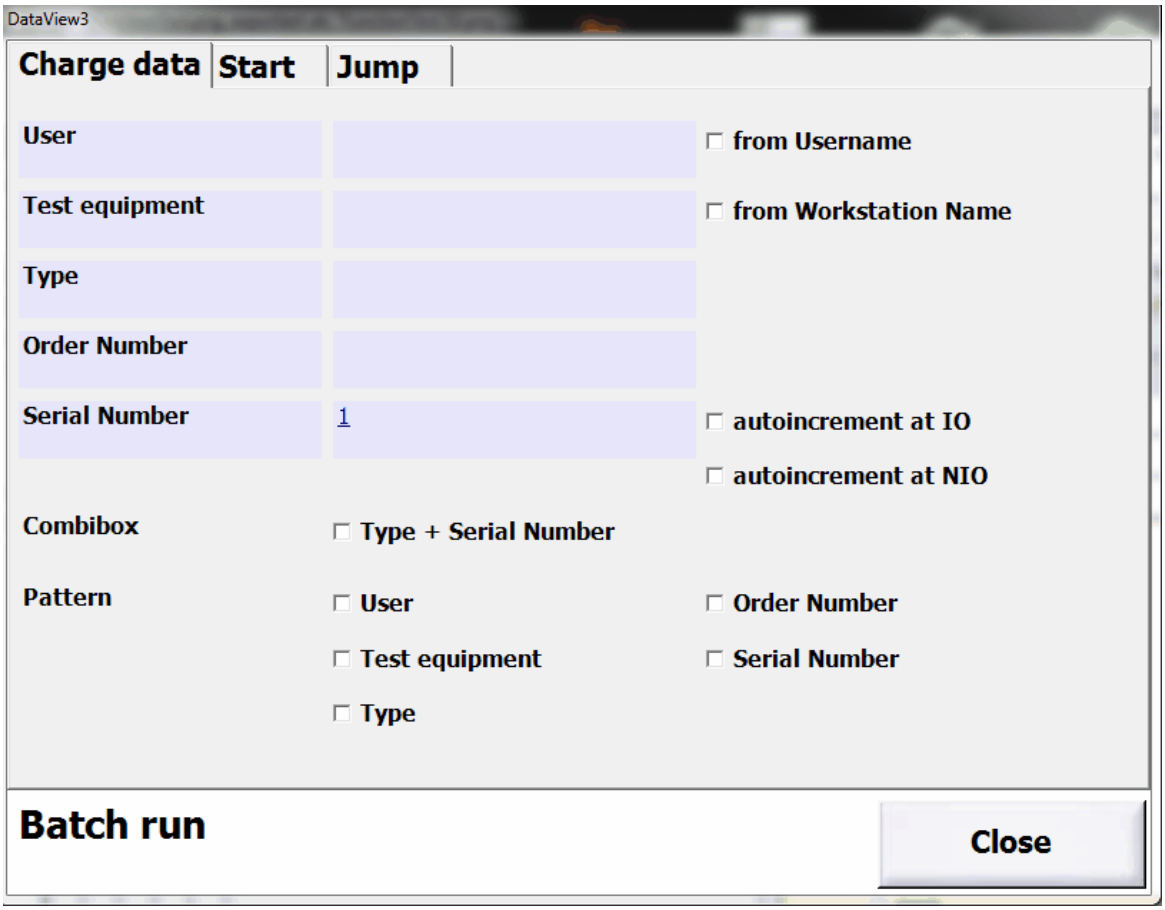


SFC PE Open reverse resp. 2. Phase **SFC PE Open Auto**



3.3.8 Batch

The batch data will be configured using the following dialog.



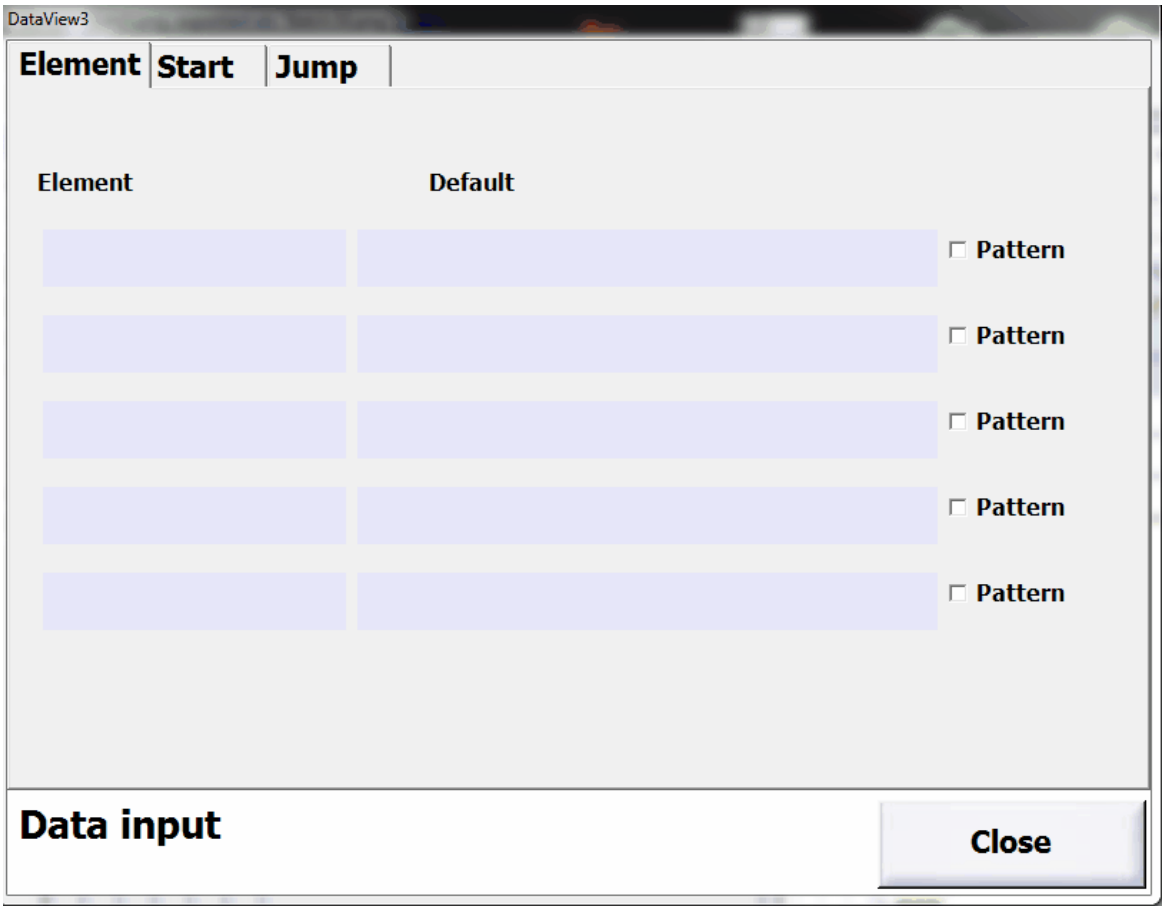
With the test step **Batch** you can enter data for a charge.

The entered data will be stored in the result file and report file and can be printed locally. This test type can be configured individually. In the top most entry field a preset user can be entered or by activating the checkbox **from Username** the currently logged in user will be used. Also the entry field **Test equipment** can be preset or the name of the worksation can be used. In the both middle fields a type and ordern number can be preset. To generate a sequential serial number you can preset the first serial number. The serial number can be automatical increased on passed and/or failed tests. In this case the serial numer must not contain any alphabetic characters. The start conditions can be set as usual.

Using the additional checkboxes the fields can provided with Patterns. This allows the input to be checked for plausibility.

3.3.9 Data input

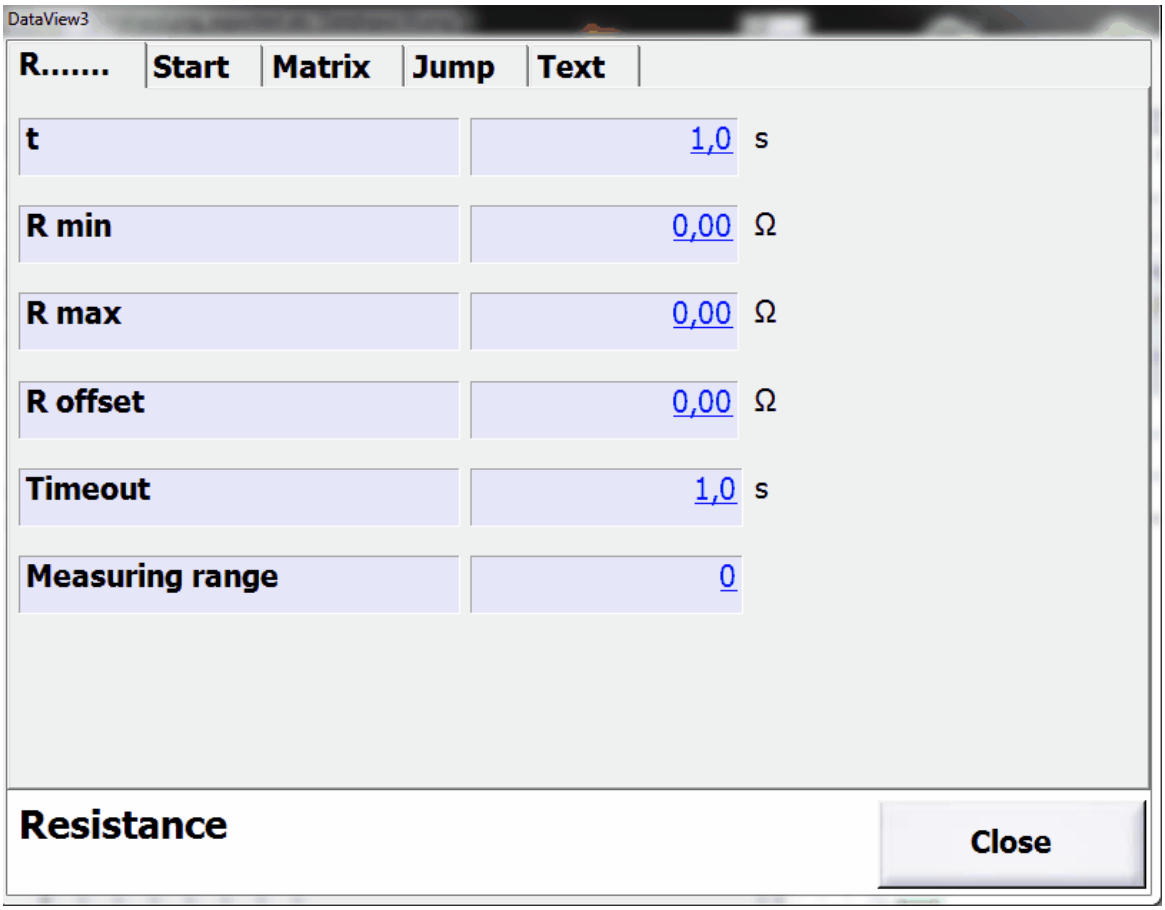
The data input will be configured using the following dialog.



You can configure up to 5 fields to enter any data. Is the corresponding checkbox **Pattern** active the preset will be used as a Pattern. This allows the input to be checked for plausibility.

3.3.10 Resistance

The resistance test will be configured using the following dialog.



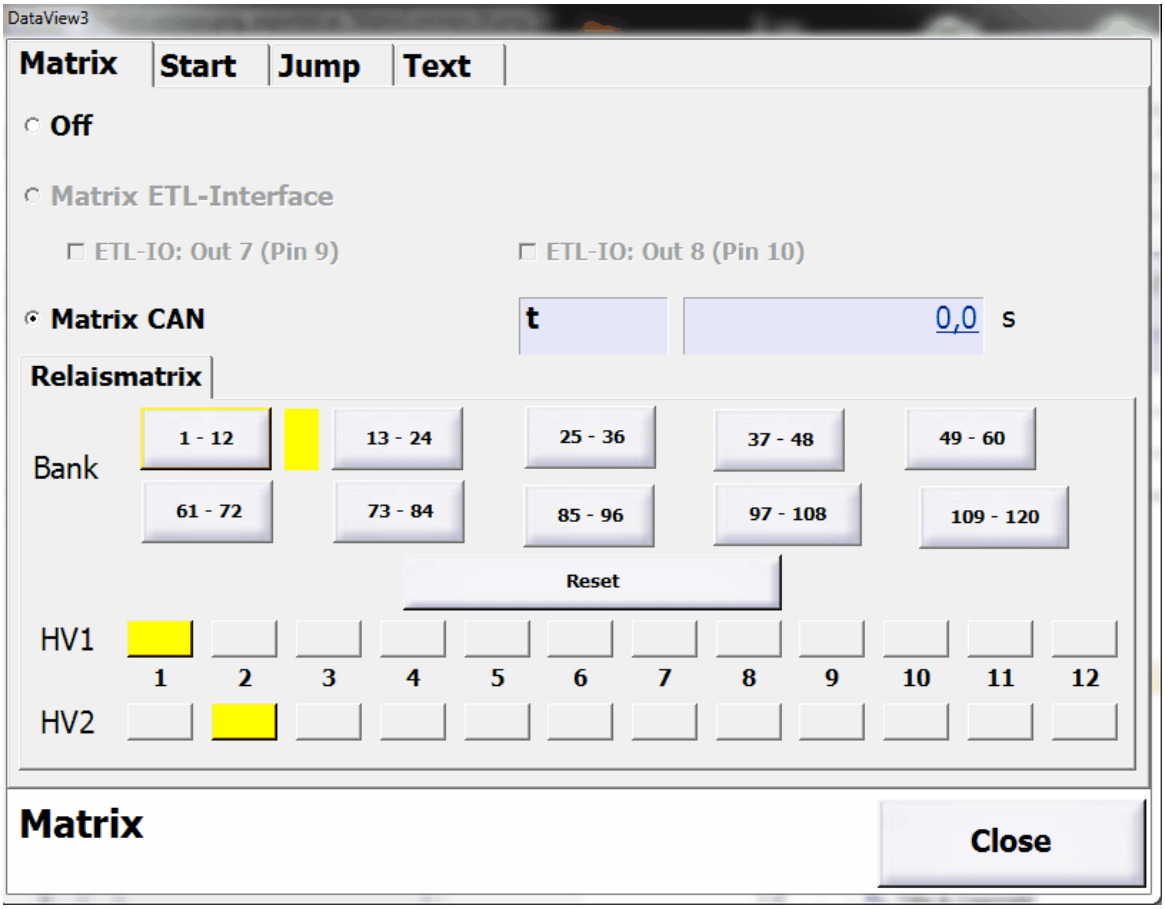
Depending on the configuration and firmware of the **ATS 400** not all parameters will be displayed.

Parameter	Description
t	Test time, the evaluation will be done when it is elapsed.
R min	Lower limit for the evaluation.
R max	Upper limit for the evaluation.
R offset	Offset to compensate the resistance of the measurement cables. This value will be subtracted from the measurement value before evaluation.
Timeout	Time within that valid measurements must be present.
Measuring range	Selection for the measurement range. 0: Automatic

Parameter	Description
	Other values depends from the configuration of the **ATS 400**.

3.3.11 Matrix

The matrix test step will be configured using the following dialog.



This step can only be chossen in the case a configuration file for a matrix is present.

Parameter	Description
`Off`	Both outputs of the ETL-Interface are off and all relais of a matrix are in default position.
`Matrix ETL-Interface`	This checkbox is always disabled.
`ETL-IO: Out 7 (Pin9)`	This checkbox is always disabled.
`ETL-IO: Out 8 (Pin10)`	This checkbox is always disabled.

Parameter	Description
Matrix CAN	This checkbox can be selected in the case a cofiguration file for a matrix is existent. If the checkbox is active the matrix can be configured.
t	This time determines how long the step will be executed. This can be used to make external measurements.

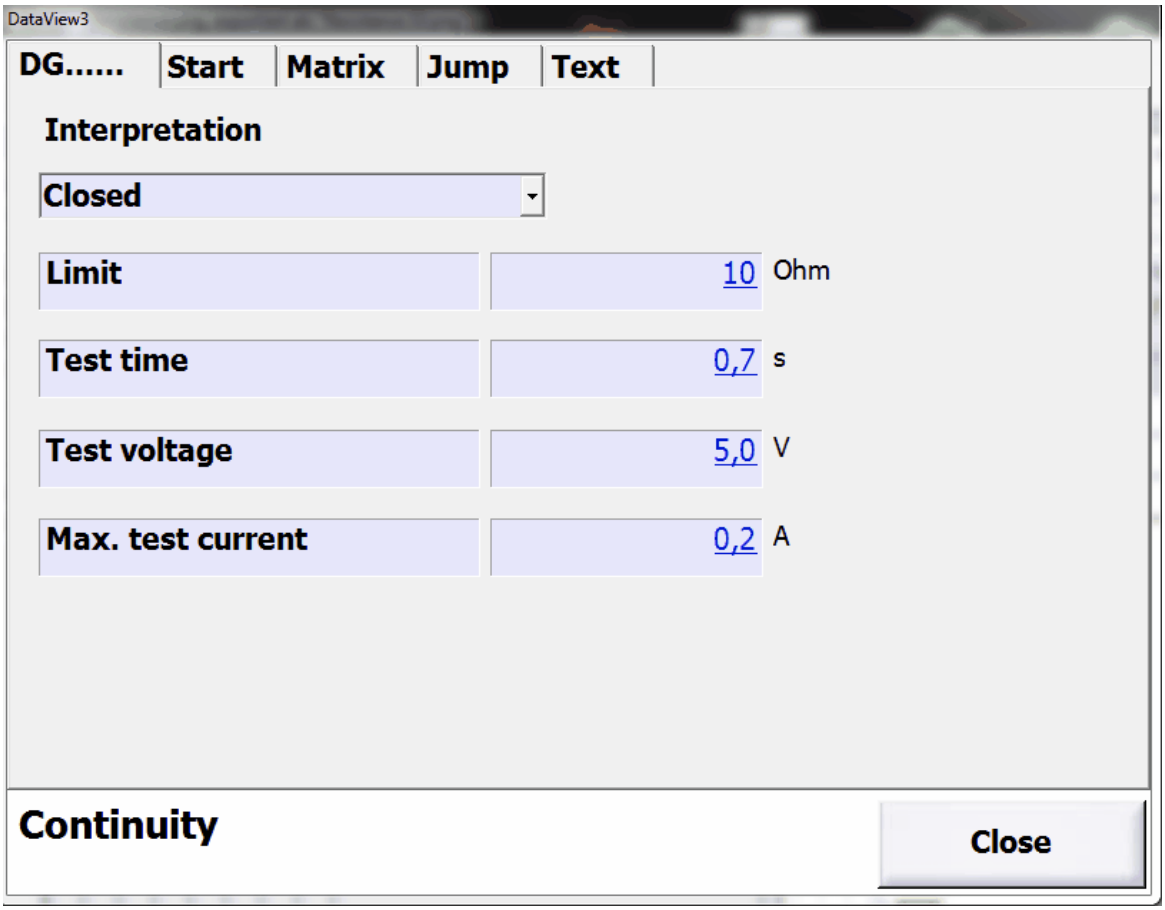
On the sub property page **Relaismatrix** are controls to configure the matrix.

Parameter	Description
Bank	With the buttons it can be switched between the banks of the different outputs. If there is a non default setting in a bank a yellow field will be displayed near the button.
Reset	Sets als outputs to the default setting.
HV1	If a button in this line is set the wire HV1 is switched to the coresponding output.
	In this line the number of the outputs of the active bank are displayed.
HV2	If a button in this line is set the wire HV2 is switched to the coresponding output.

In the example above the output 1 is connected to wire HV1 and output 2 is connected to wire HV2.

3.3.12 Continuity test

The continuity test will be configured using the following dialog.

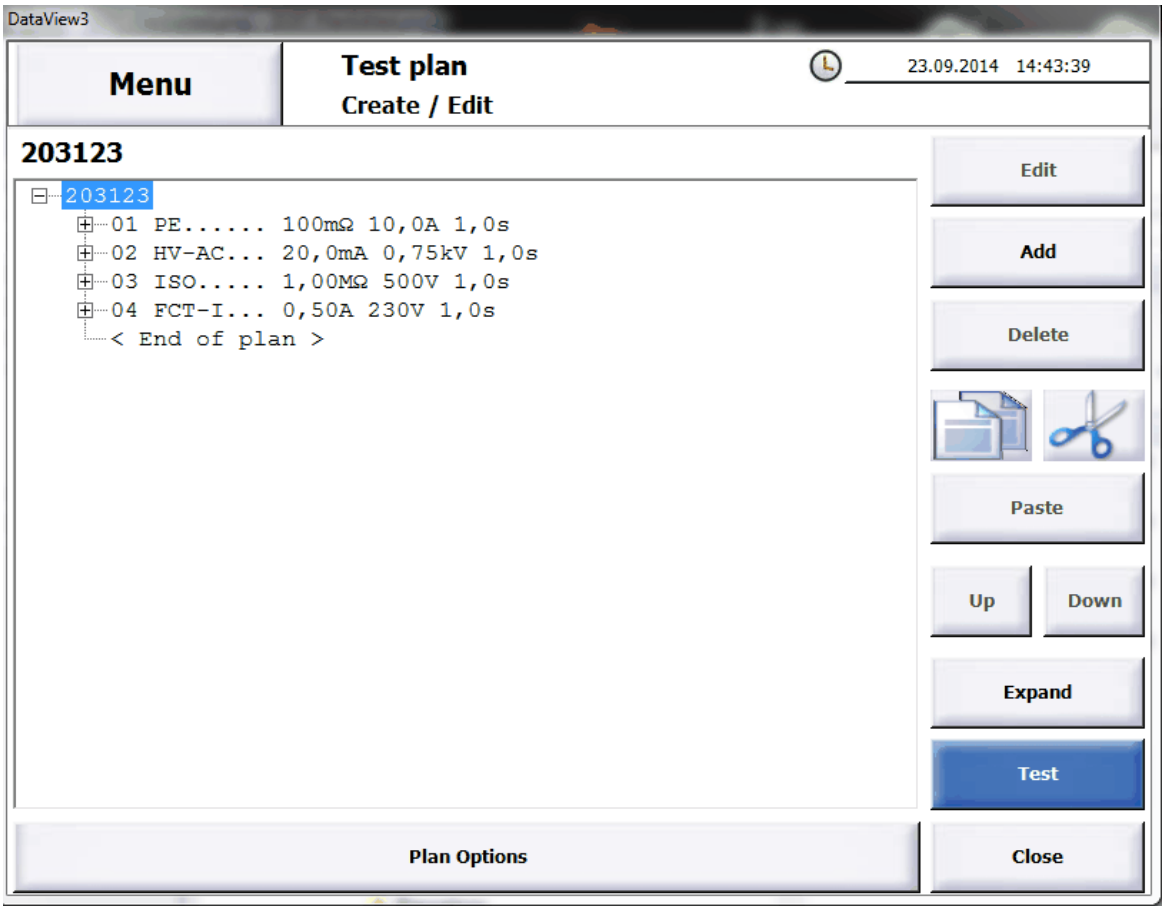


Parameter	Description
`Interpretation`	`Closed`: The test will be evaluated as passed if a resistance lower than `Limit` will be measured. `Open`: The test will be evaluated as passed if a resistance higher than `Limit` will be measured.
`Limit`	Limit for the evaluation.
`Test time`	Time after that the measurement will be evaluated.
`Test voltage`	Maximum test voltage used for the measurement.
`Max. test current`	Maximum current during the test.

3.4 Test plan settings

This section discusses the settings that are valid for the entire test plan.

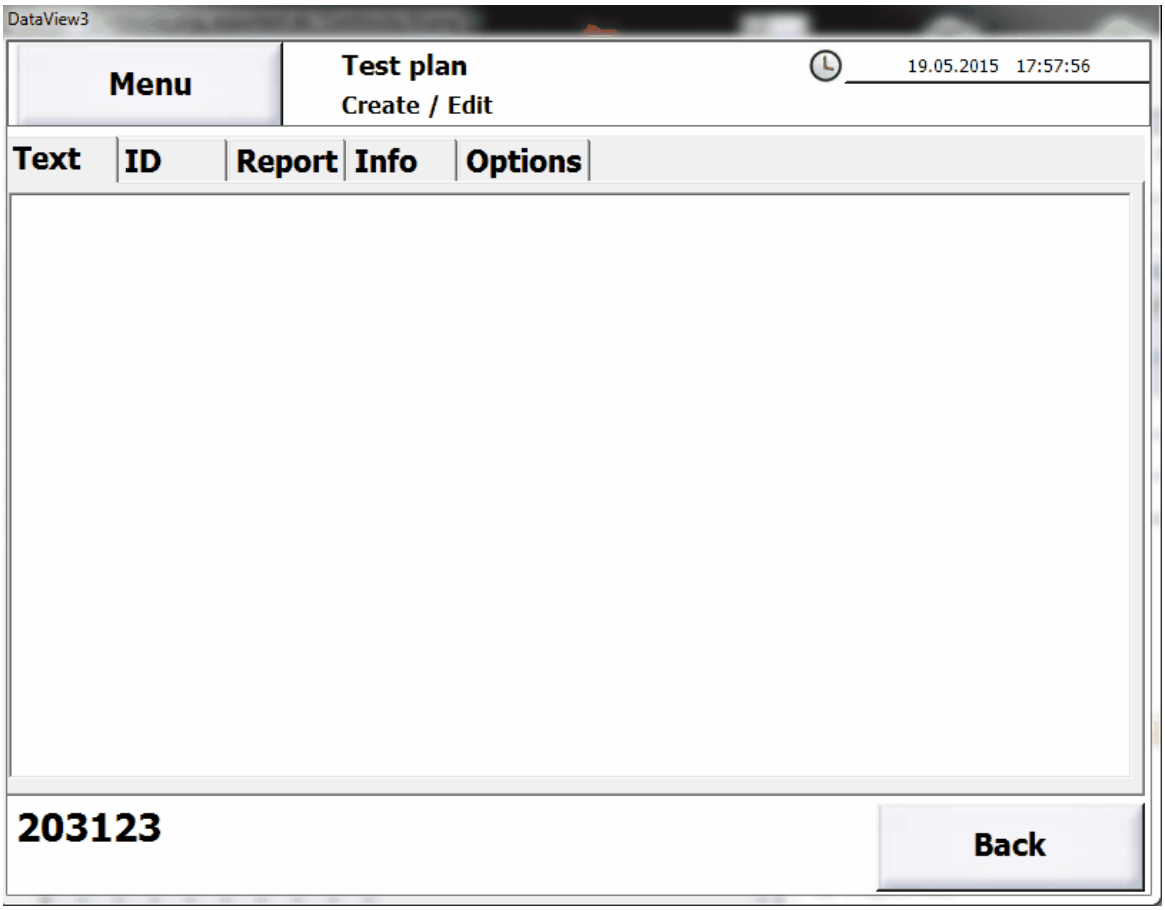
The associated window can be opened using the **Plan Options** button in the **Create / Edit** window.



The window with the **Planoptions** opens.

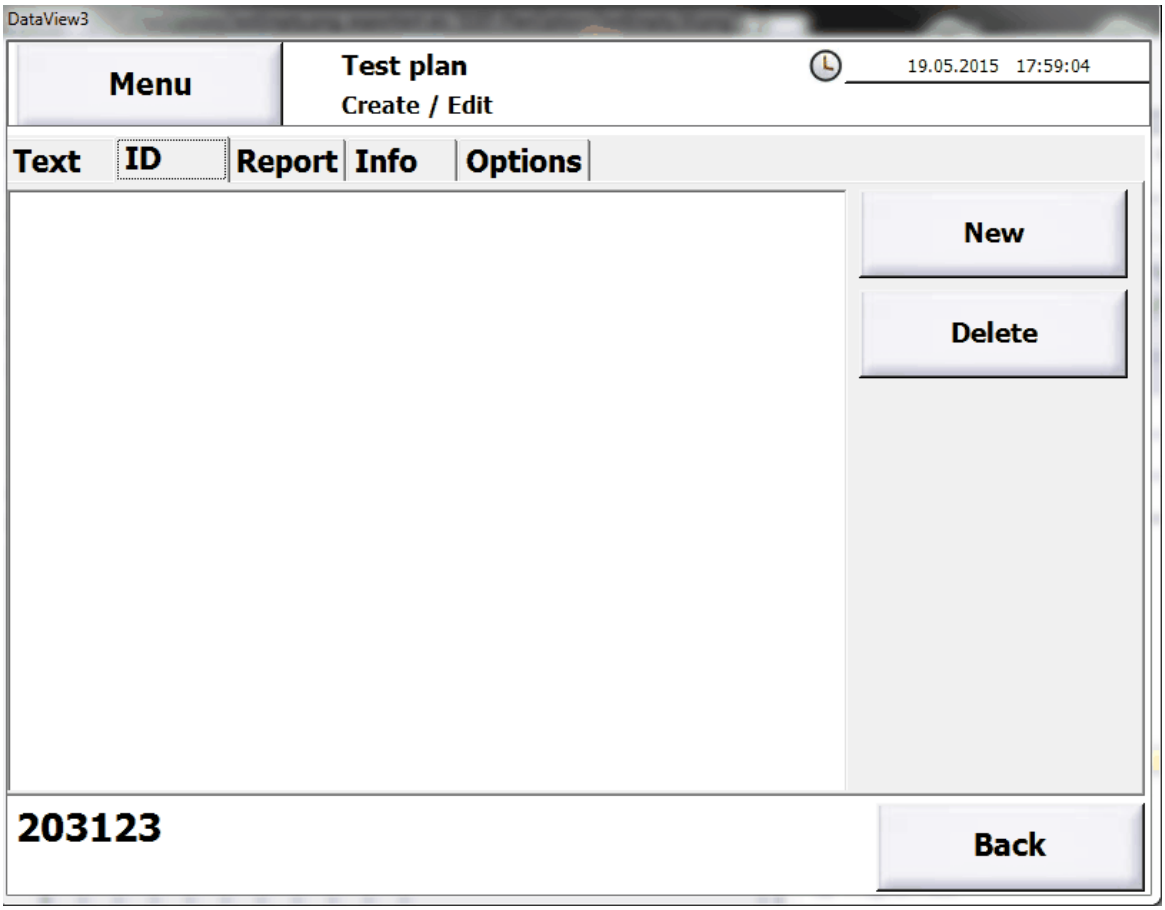
3.4.1 Text

You can enter a free text here.



3.4.2 Identification

Here you can configure identifications which are used for automatic plan selection.



With the button **New** you can enter an new idetification.

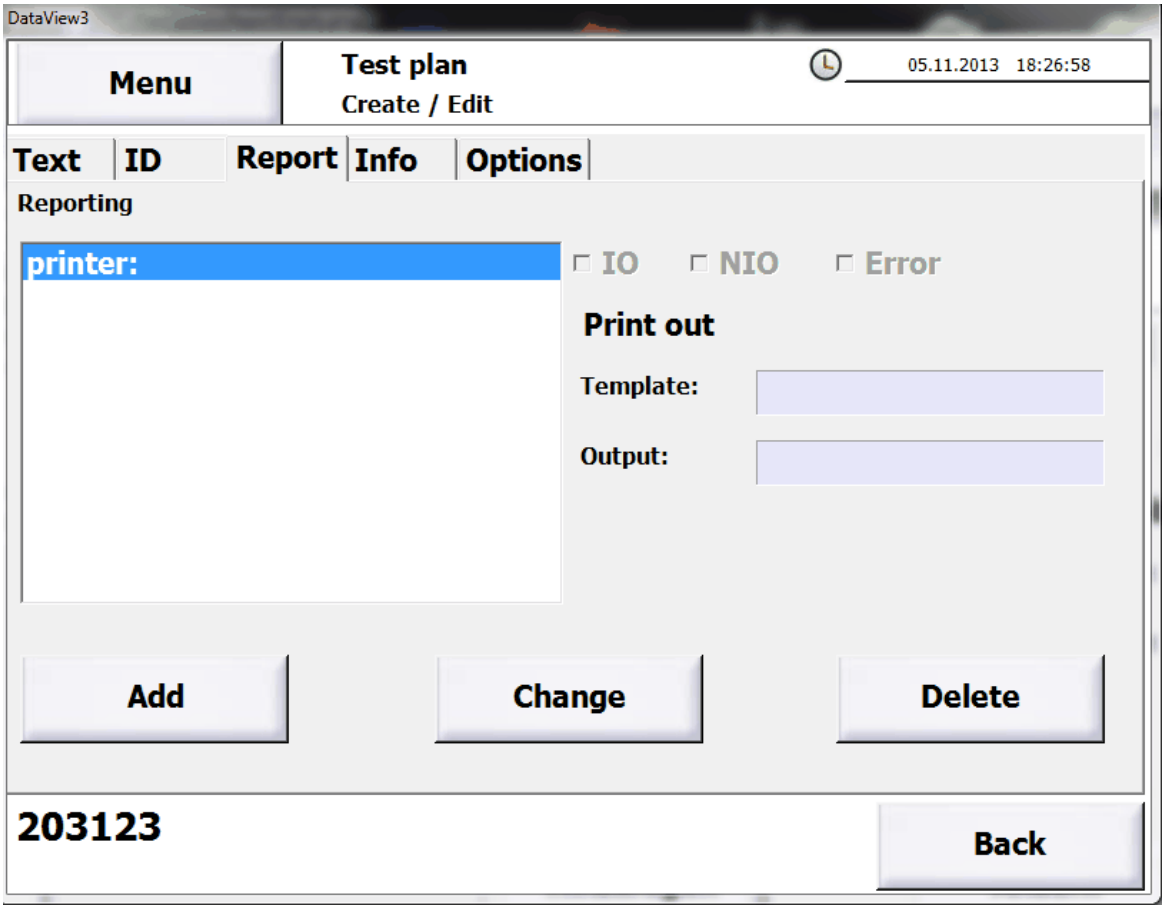
With the button **Delete** the selected identification will be deleted.

The identifications will be used for automatic plan selection.

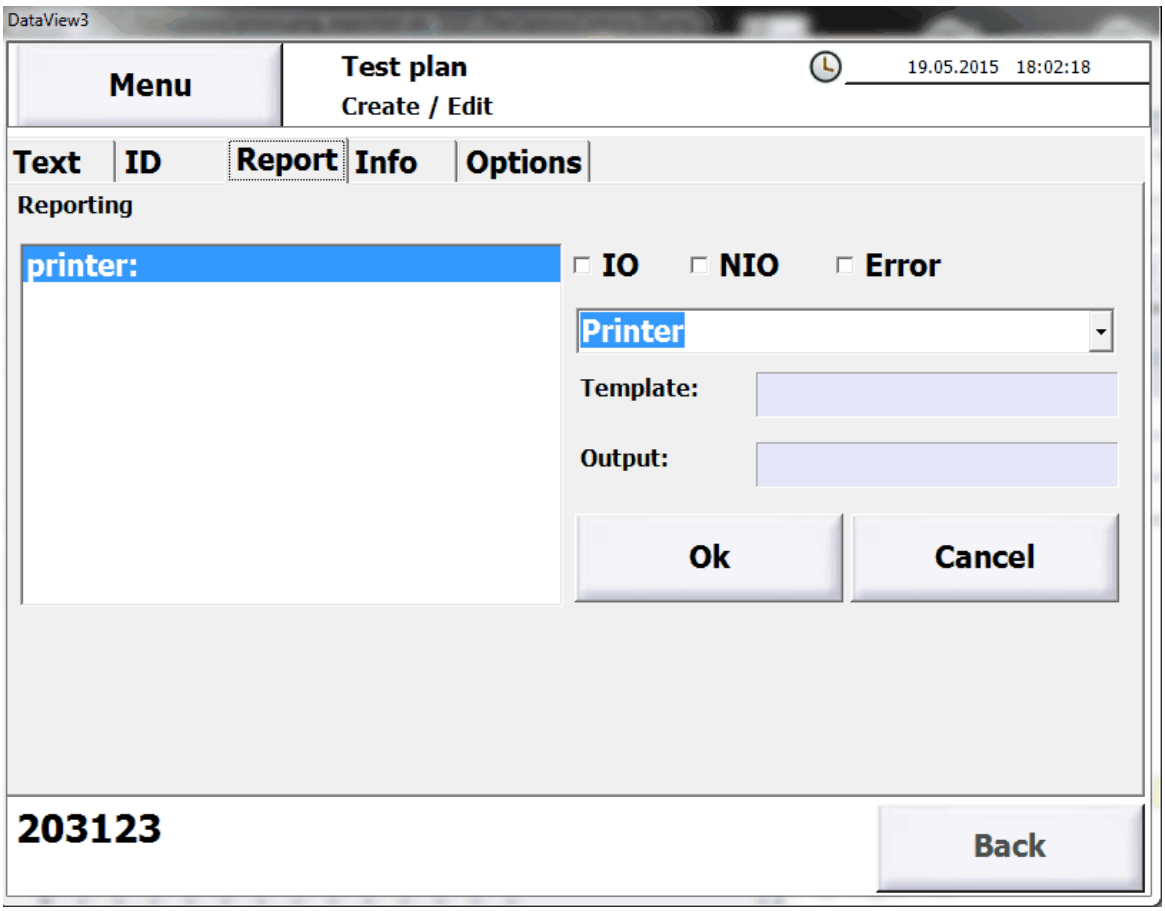
3.4.3 Report options

The report options provide the possibility to convert the results data into another format. For part of the options, templates need to be created.

When calling up for the first time, no report options are yet active.

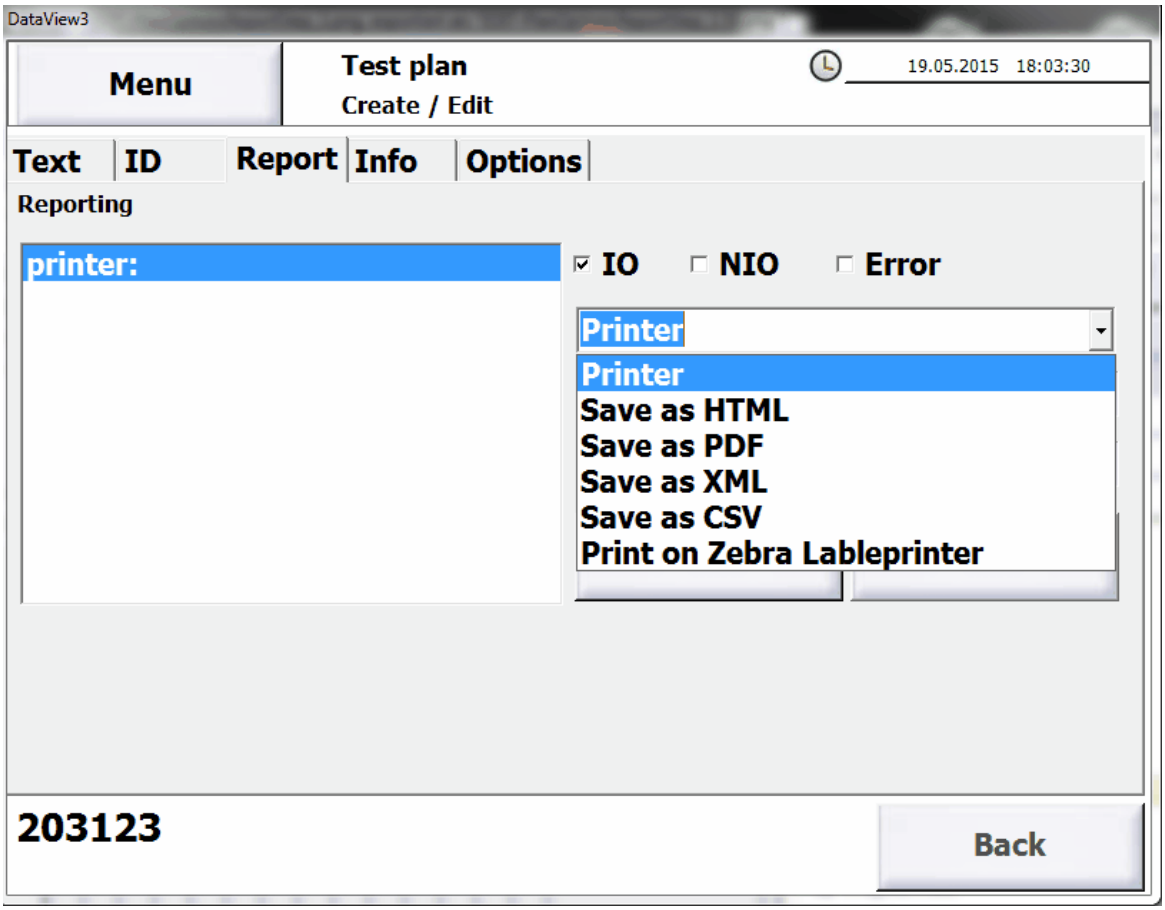


Click on the **Change** button. The dialogue changes, which means that the report selected can be edited.



Activate one or more of the **IO**, **NIO** or **Error** checkboxes so that the report is created for the corresponding overall result.

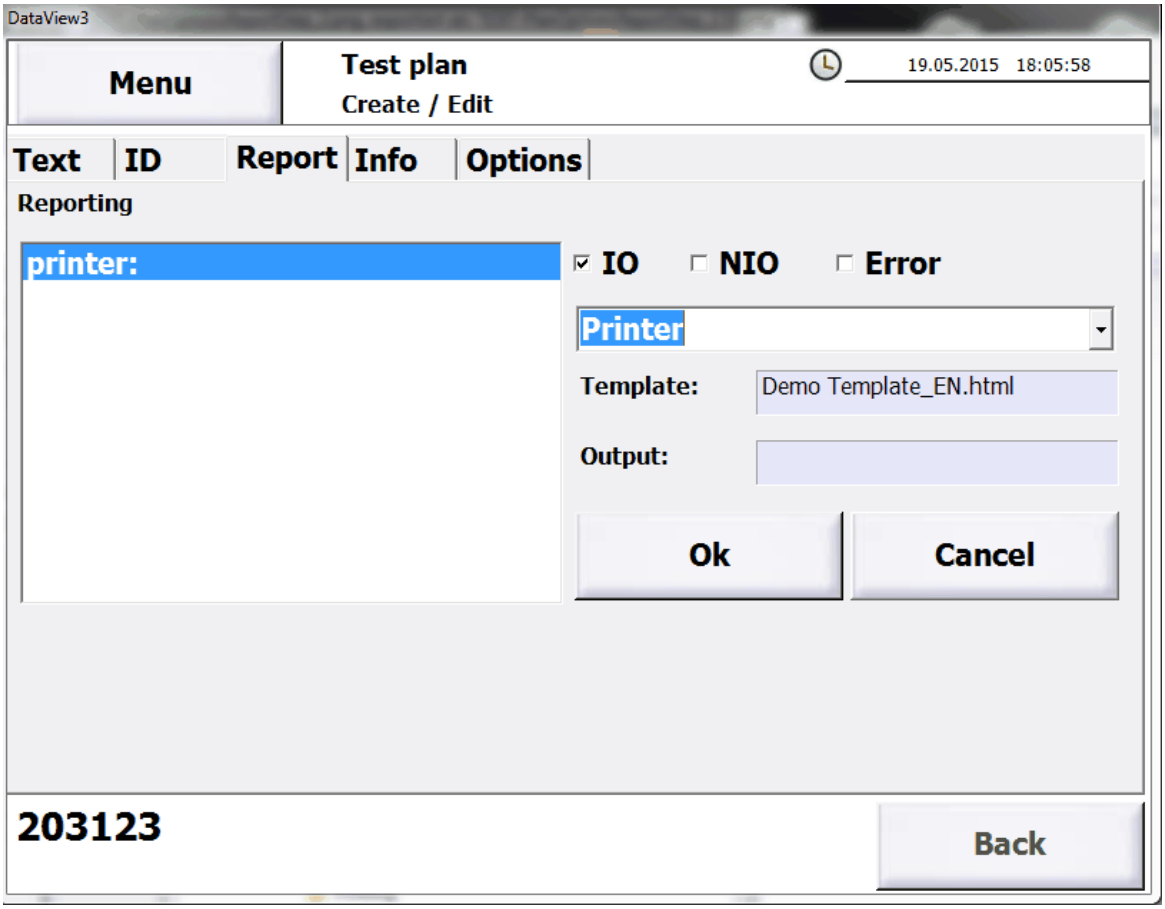
Select the desired report type from the dropdown box.



For the **Printer**, **Save as HTML** and **Save as PDF** options, you need to select an HTML template.
With the **Save as XML** option, you can select a style sheet.
With the **Save as CSV** option you need to select a CSV template.
With the **Print on Zebra Lableprinter** option, you need to select a ZPL file.

With the **Printer** and **Print on Zebra Lableprinter** options, you can additionally select a printer. If you do not select a printer, the current standard printer is used to print.

When clicking on the Template or Printer fields, the corresponding standard dialogue of Windows opens.

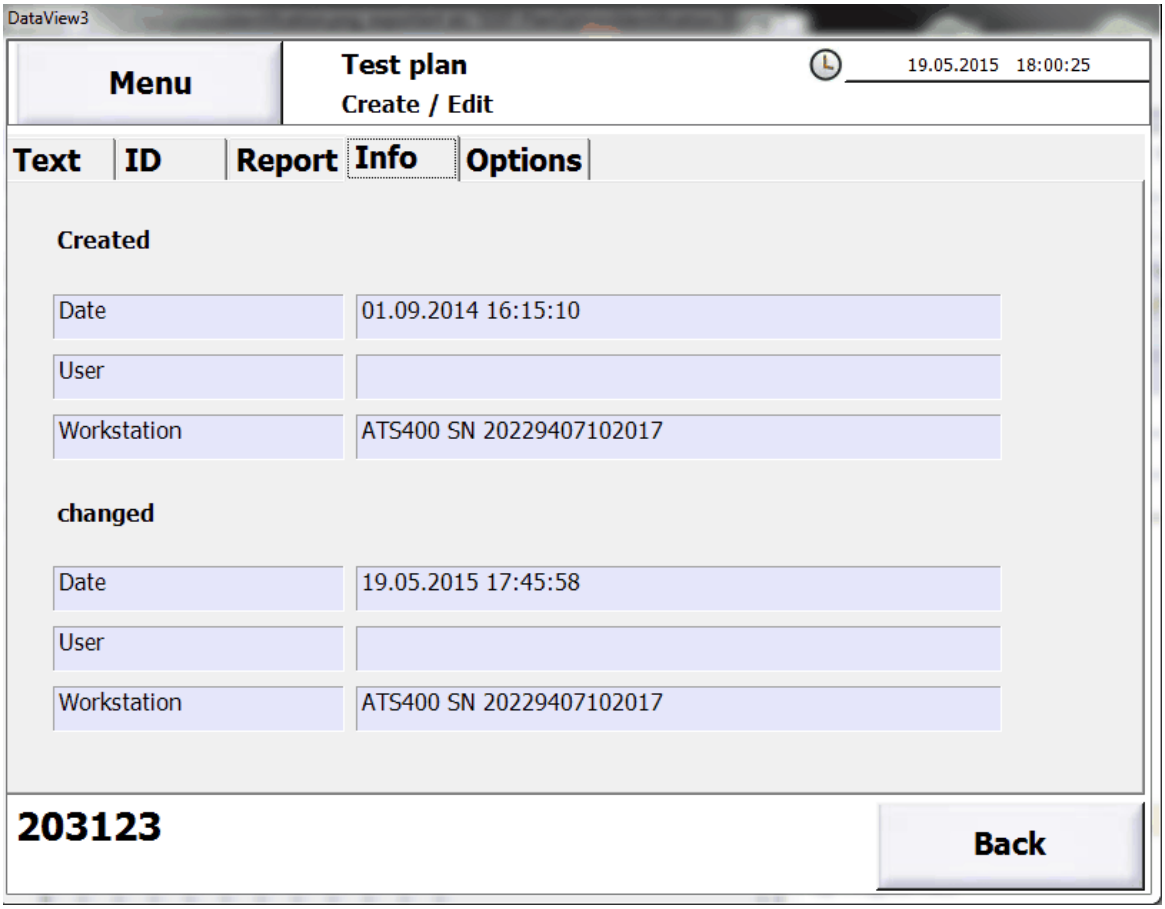


With the **Ok** button, you can assume the data from the report selected. With the **Cancel** button, the changes are dismissed.

With the **Save as HTML**, **Save as PDF**, **Save as XML** und **Save as CSV** options a new file is created. The place of saving and the file name are guided by the settings in **Settings** -> **File storage** -> **Result**.

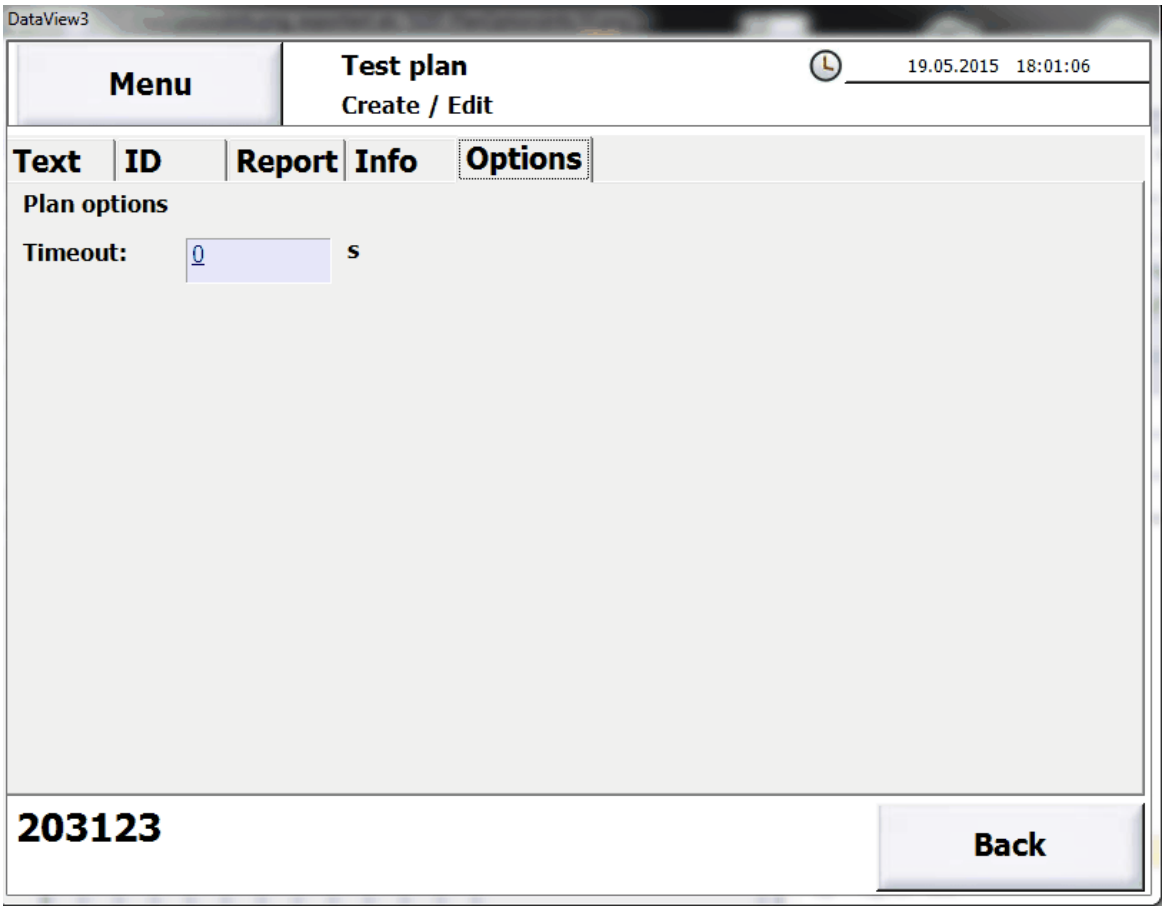
3.4.4 Info

Here it will displayed when and on which workstation and which user the test plan was created or changed. If there was no workstation name configured rsp. the user administration was not active the according fields are empty.



3.4.5 Options

This option will not be used any more. This option has expanded and is now part of the Start conditions.



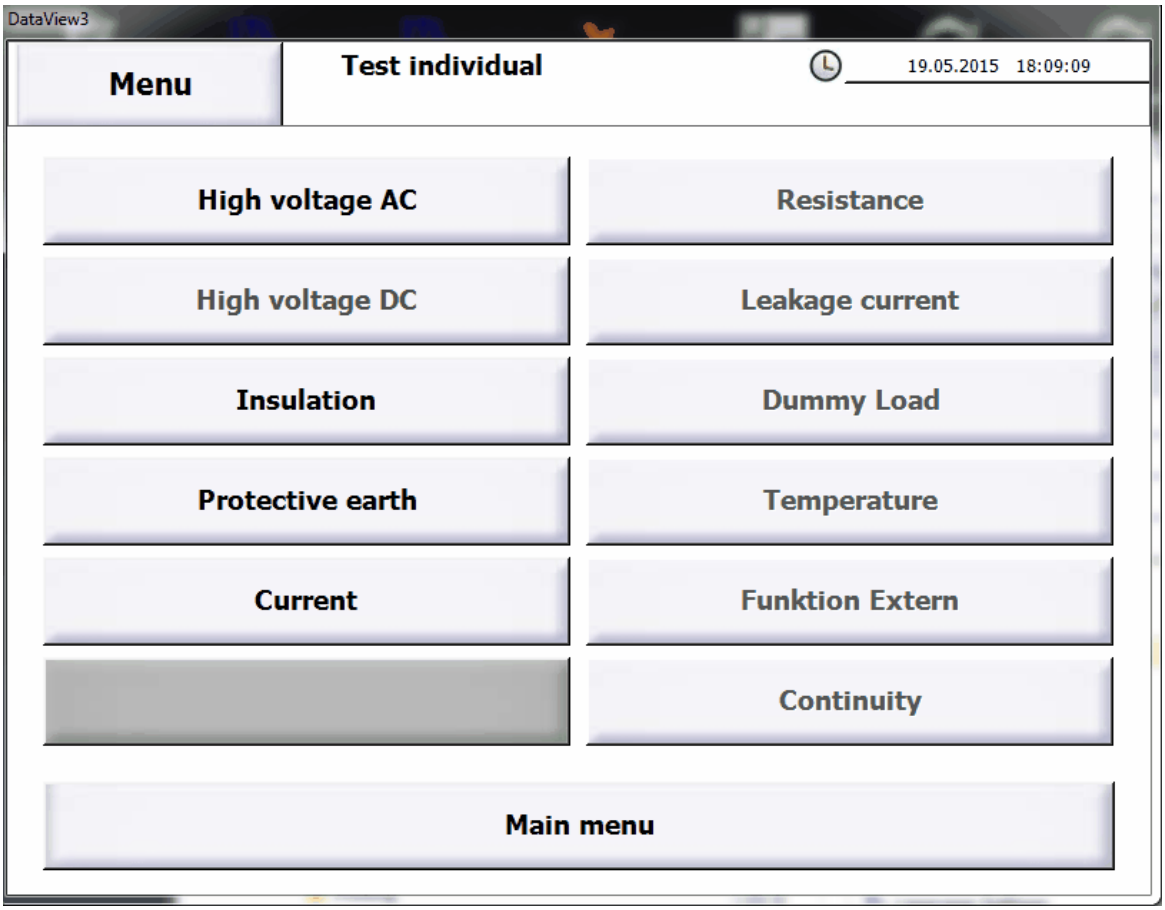
4 Inspector

This part of the manual is aimed for those persons using the program for testing.

This part described the general procedures for using. Regarding to the different situations this part cannot describe the concrete situation at a test station.

4.1 Test individual

Open the dialog choosing **Test individual**.

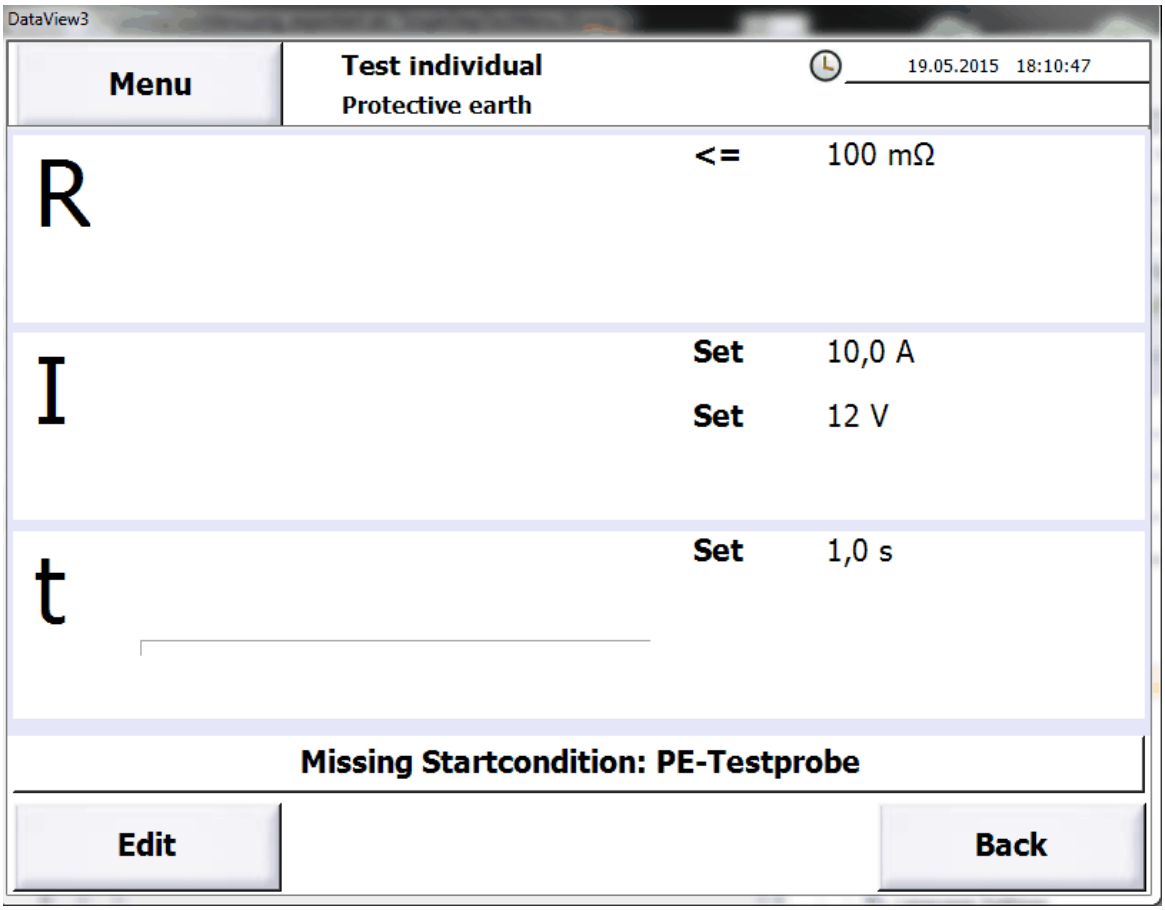


There is a button for each test type. The buttons for the available test types on your **ATS400** are operational.

The window for each test type is the same. In the following this is described with the protective earth test as an example.

4.1.1 Protective earth test

You will do a protective earth test in this window.



Before the first test no values will be displayed. During and after the test the values will be displayed.

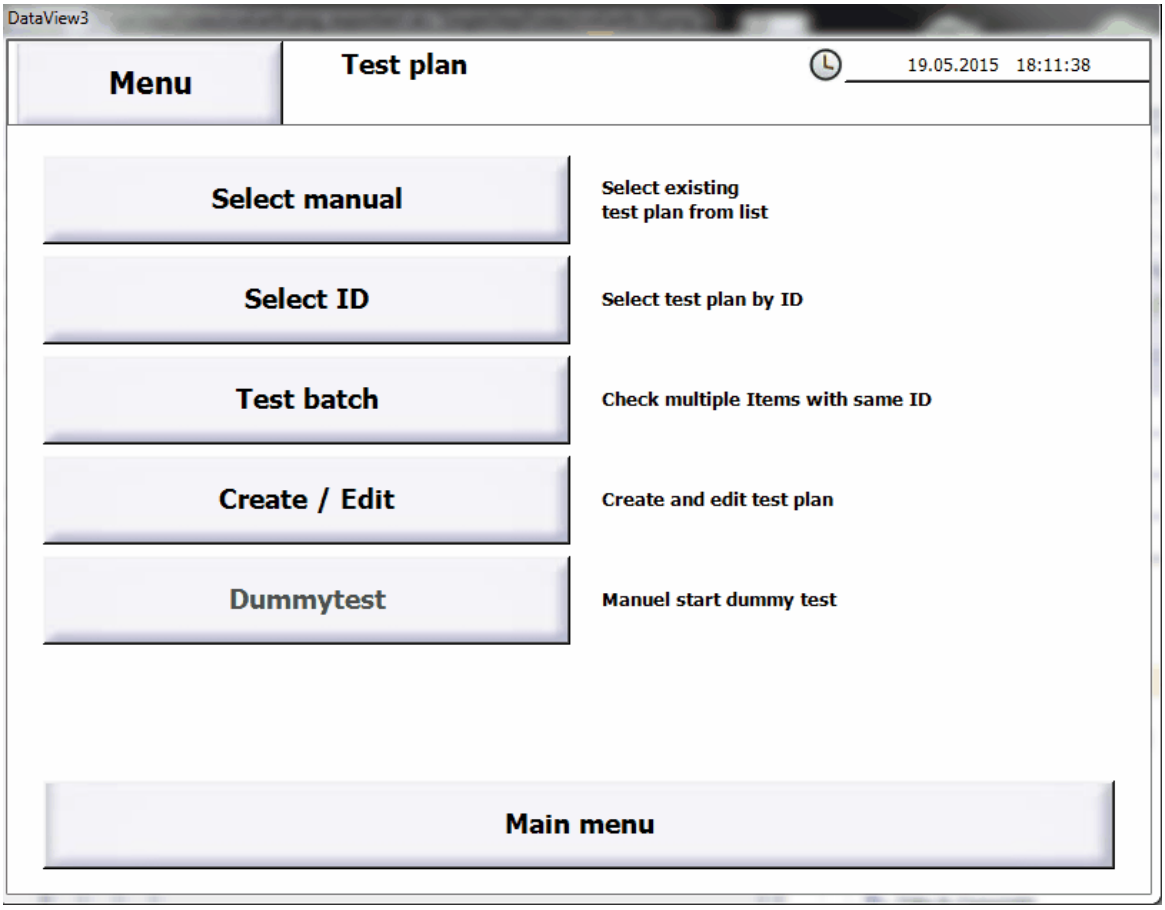
A white background means that no test has been done.
A yellow background means that a test is currently executing.
A green background means that the last test was evaluated as passed.
A red background means that the last test was evaluated as failed.

Button	Action
Menu	This button is operational when no test is executed. The main menu will be displayed.
Edit	This button is operational when no test is executed. The configuration dialog will be displayed.
Back	The window will be closed. During a test the button changes to **Cancel**.

Button	Action
Cancel	The currently running test will be aborted. The test will be evaluated as failed. The button changes to Back.

4.2 Test plan

Open the dialog choosing Test plan.

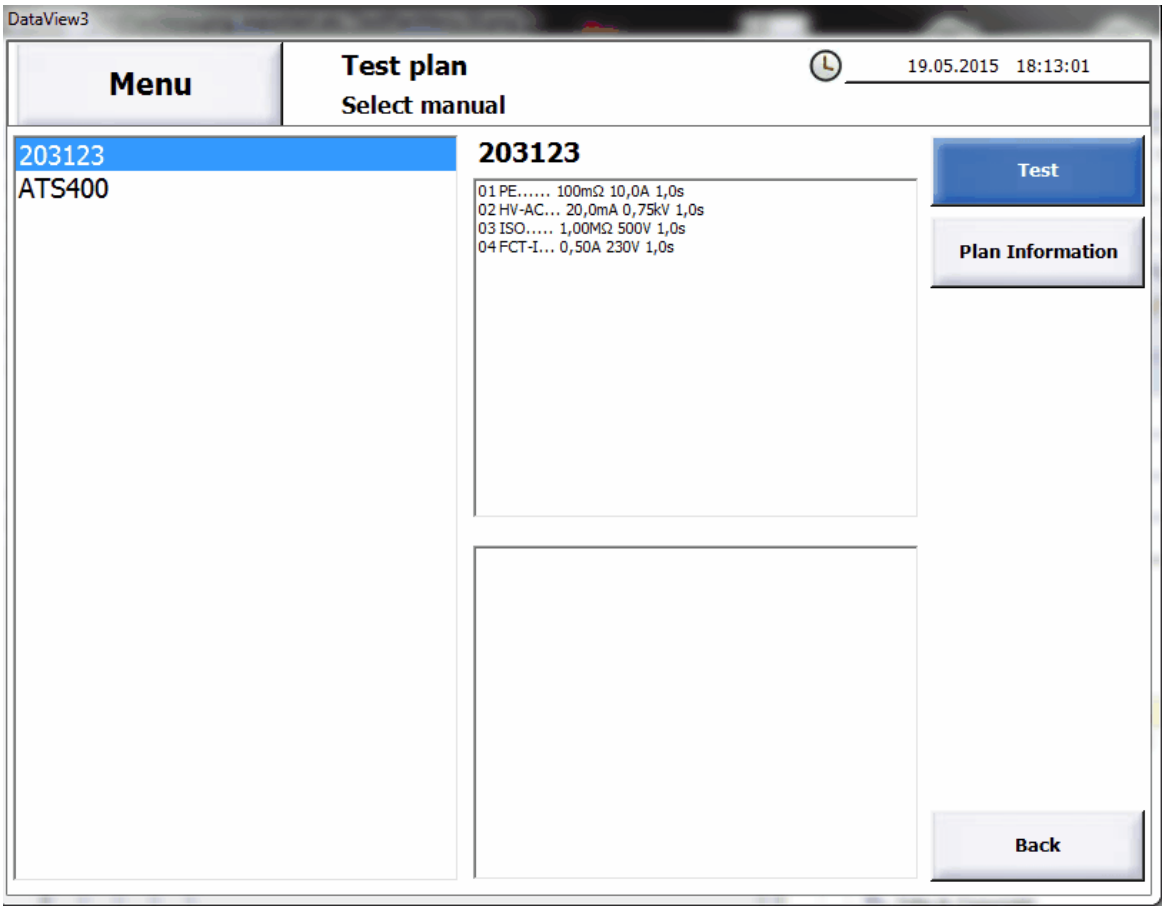


Button	Action
Menu	The main menu will be displayed.
Select manual	The window for manual test plan selection will be opened.
Select ID	The window for automatic test plan selection will be opened. Using this selection the test plan will be closed after the test of one unit under test.
Test batch	The window for automatic test plan selection will be opened. Using this

Button	Action
	selection the test plan will be closed by the tester. This button is not operational when the workstation is setup to use **ETL-Interface** or **File Plan.ID** for automatic test plan selection.
Create / Edit	The window for test plan administering will be opened.
Dummytest	This button is operational when a dummy test plan is present. A dummy test will be done.
Main menu	The main menu will be displayed.

4.2.1 Manual test plan selection

Open the dialog choosing **Test plan** -> **Select manual**.



On the left side the list of the existing test plans are displayed.

In the midth upper part the test steps in the selected test plan are displayed. Is no

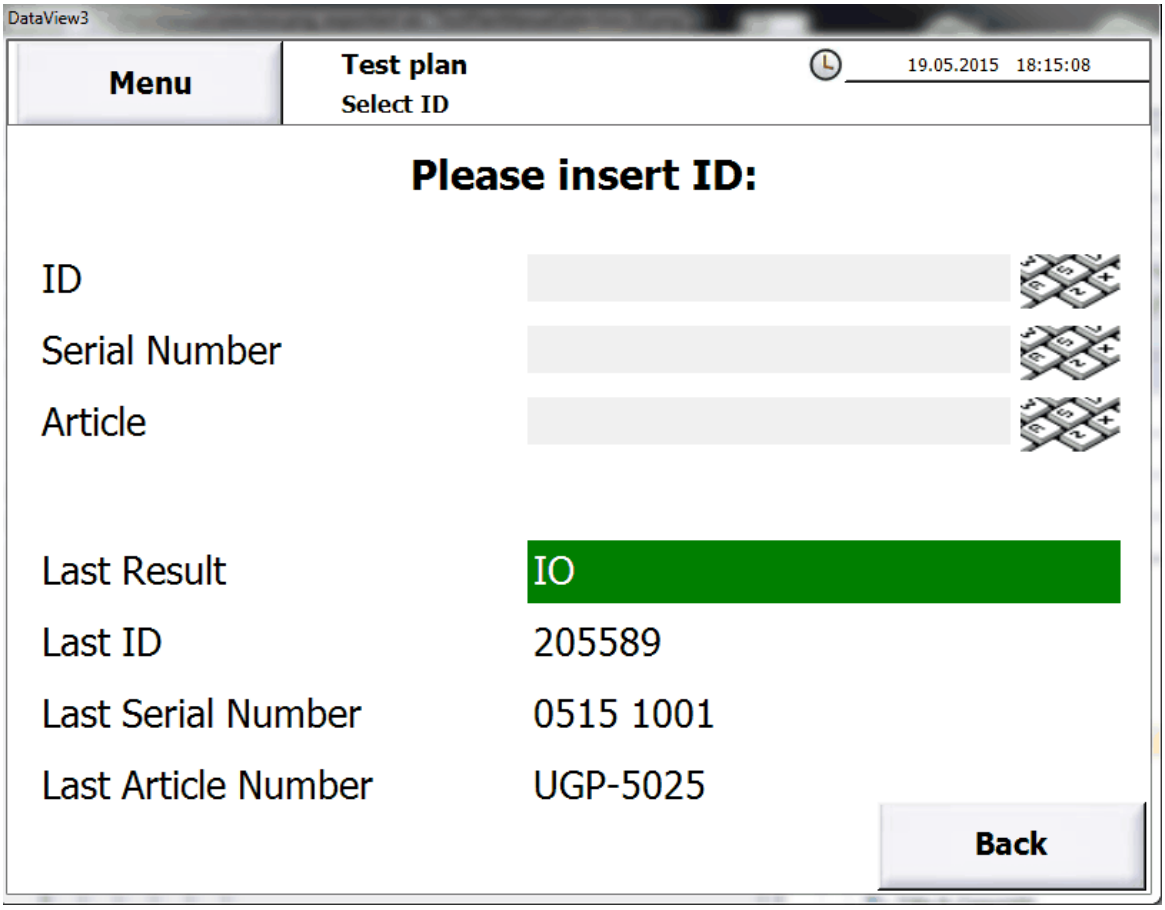
test plan selected the list is empty.

In the midth lower part the data for the test step is displayed. Is no test plan or no test step selected the list is empty.

Button	Action
Menu	The main menu will be displayed.
Test	The window **Test plan** will be opened.
Plan information	The window for Plan options will be opened. In this mode you cannot do any changes.
Back	The window will be closed.

4.2.2 Automatic test plan selection

Open the dialog choosing **Test plan** -> **Select ID** or **Test plan** -> **Test batch**.



The number of the displayed fields depends on how the automatic test plan selection is configured. In this example the maximum number of fields is displayed and is acccording to the example Article number and serial number with additionally activated

checkbox for the article description.

Button	Action
Menu	The main menu will be displayed.
Back	The window will be closed.

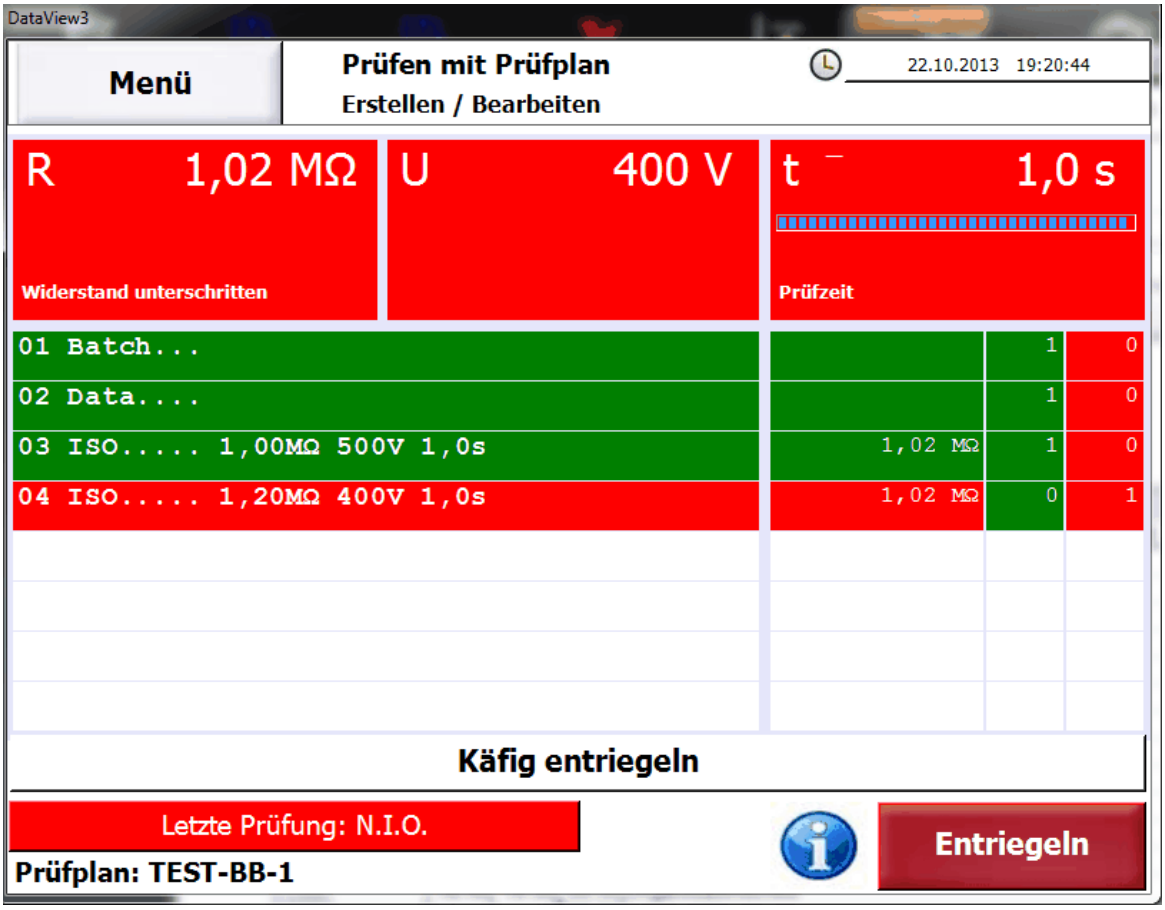
4.3 Safety cabinet

The safety cabinets are built this way that they are locked when they are not supplied by the **ATS400**. After powering on the **ATS400** they are unlocked and can be opened.

Depending how the **ATS400** is setup in the administration **ETL DataView 3** behaves different together with the safety cabinet.

The setting **Locked during plan** prevents an influence during executing a test plan. The safety cabinet can be opened after the test plan has completed.

The setting **Unlock on pass** also contains a process control. In the case a test will be evaluated as failed the safety cabinet will be unlocked after a second action for unlocking. Dependend from the configuration of the saftey cabinet this can be done with the button **Cancel** and always with the button **Unlock** in **ETL DataView 3**.



When the safety cabinet is unlocked the message **Open safety cabinet** will be displayed until the safety cabinet has been opened.

5 Report creation

This part of the manual is aimed at the persons who create and edit the report templates.

It contains information that is necessary to create report templates that are required for the individual report options.

5.1 Creating templates

For the use of the **Printer**, **Save as HTML** and **Save as PDF** report options, you need to create an HTML template.
When using the **Save as XML** report option, you can create a style sheet.
To use the **Save As CSV** report option, you need to create a CSV template.
To use the **Print on Zebra Lableprinter** option, you need to create a ZPL file as a template.

All templates have in common that the data can be accessed via key words.

5.1.1 Key words

You can access the data of the results files via key words. The key words always consist of prefix **TAG_** and the postfix **_TAG**.They are not displayed in the following tables. Upper and lower case is considered for the key words. Assume the key words in the way as they are written in the following tables.

Key words that apply for the entire test plan have the form **TAG_<key word>_TAG**.

Key words that apply for a test view have the form **TAG_<step>_<key word>_TAG**. In doing so, it is defined in **<step>** what test step is accessed. If **<step>** has the value **##** , every test step of the test plan is accessed. In this case, the key word must exist in a cell of a table. If **<step>** has the value **#n**, while **n** is a number counted from 1, precisely this step is accessed. In this case, the key word can also be used outside a table.

Key words that refer to the multiple test data of a test step have the form **TAG_<step>_Multitest_<Multitest>_<key word>_TAG**. In doing so, it is defined in **<Multitest>** what multiple test is accessed. If **<Multitest>** has the value **##** , every multiple test is accessed. In this case, the key word must exist in a cell of a table. If **<Multitest>** has the value **#n**, while **n** is a number counted from 1, precisely this multiple test is accessed.

5.1.1.1 Key words of the results data

This section describes all key words that apply for the total test plan and are addressed with the form **TAG_<key word>_TAG** .

Key words that are part of every results file:

Key word	Explanation
DataView_Version	Version of **ETL DataView 3** with which this file

Key word	Explanation
	was created.
PlanName	Name of the test plan, is filled with the file name when being created.
PlanPath	Relative path to the application where the test plan was saved.
PlanDescription	Description of the test plan. This value can be entered by the user in **Settings** -> **Text**.
PlanCreatedByUser	User who created the test plan first. If user administration is not active, the field is empty.
PlanCreatedByWorkstation	Test station where the test plan was created. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
PlanCreatedOnDate	Date of creating the test plan. The date is in the format in accordance with the country settings valid at this moment in time.
PlanEditedByUser	User who modified the test plan last. If user administration is not active, the field is empty.
PlanEditedByWorkstation	Test station where the test plan was modified last. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
PlanEditedOnDate	Date of modifying the test plan. The date is in the format in accordance with the country settings valid at this moment in time.
PlanIdentificationEnabled	The **<ResultData>\<Identification>** block exists.
PlanBatchEnabled	Intended for future purposes.
PlanTestSteps	Number of test steps in the test plan.
PlanSelectMode	Selection method for plan selection via identification
PlanSelectPatternID	Template to identify the PlanID
PlanSelectPatternTyp	Template to identify the type if it is entered with the ID.
PlanSelectPatternSerie	Template to identify the serial number if it is entered with the ID.
PlanSelectPatternMask	Bit template: 1: Combined field (2+4) 2: Entry type 4: Entry series 8: Entry articelnumber
DATE	Date of the test in the local date format.

Key word	Explanation
TIME	Time of the test in the local time format.
TESTER	User logged in.
PLAN_NAME	Name of the test plan used.
WORKSTATION	Name of the test station.
USEDID	ID used for the automatic test plan selection.
RESULT	Total result of the plan. **Passed** -> The test item has passed the test. **Failed** -> the test item has not passed the test or the test was cancelled.
FileSavedByUser	User who saved the test plan or the result file.
FileSavedByWorkstation	Test station where the test plan or the result file was saved. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
FileSavedOnDate	Date of saving the test plan or the result file. The date is in the format in accordance with the country settings valid at this moment in time.
Count_Tests	Number of tests that were carried out since starting the test plan.
Count_IO	Number of IO results of the test since starting the test plan.
Count_NIO	Number of NIO results of the test since starting the test plan.
Count_ERROR	Number of errors of the test since starting the test plan.
PlanCycleTime	Duration for carrying out the test. The value is always 0.
PlanStandbyTime	Duration between the end of the prior test and the start of the current test.
IDs	Number of IDs.
ID_n	Identification for the test plan. The tags are numbered from 0 to the number of IDs - 1, i.e. have the values ID_0, ID_1, etc.

Key words that are part of the **Batch run** test step:

Key word	Explanation
Benutzer	User field, can be adopted from the login.
Pruefplatz	Test station field, can be adopted from

Key word	Explanation
	the workstation settings.
Typ	Type, can already be entered during the automatic test plan selection.
Auftragsnummer	Order number
Seriennummer	Serial number, can already be entered during the automatic test plan selection. If this value is numerical, it can be automatically increased for IO or NIO.

Key words that are entered via the automatic test plan selection:

Key word	Explanation
TYPE	Type of the test item, is only filled in if the combibox is active.
USEDID	ID used to select the test plan, is only filled in when the **ID-Pattern** field is active.
SERIALNUMBER	Serial number of the test item, is only filled in if the **Serial-Pattern** field is active.
ARTICLE	Article name, is only filled in if the **Article-Pattern** field is active.

5.1.1.2 Key words of the test step parameters

The following key words are common for all test steps. These key words are addressed with the form **TAG_<step>_<key word>_TAG**.

Key words for the parameters:

Key word	Explanation
UNIT	Unit of the measurement value
UNIT2	Unit of the test size
MIN	Minimum value of the measurement value.
MAX	Maximum value of the measurement value.
StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the **StartConditionMask** field.

Key word	Explanation
StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
t_delay	Start delay between fulfilling the start condition and the start of the test.
StateChangeBits	Always 0, never used.
StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
StartStateJump	Indicates whether the Jump button is displayed.
Repeating	Indicates how often the test step is carried out.
StartButton	Indicates whether the Start button is displayed.
PassButton	Indicates whether the Pass button is displayed.
StartandJump	Indicates whether the Start and Jump buttons are displayed.

The Batch run, Data Input, Dummy load, External program, FCT-Current, High Voltage AC, High voltage DC, Insulation, Leakage current, Matrix, Light Filament current, Protective earth, PT100, Resistance and User-Interface test types use the following parameters in addition:

Key word	Explanation
Polung	Contacting setting of an external relay matrix.
PolungCAN_00 bis PolungCAN_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Multitest_Enable	Multitest is active, if the value does not equal 0.
Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements

Key word	Explanation
	1 = pass key
Multitest_Endekriterium_Anzahl	Number of multitest inspections.

The Lightcontrol, Data Input, External program, FCT-Current, High Voltage AC, High voltage DC, Insulation, Leakage current, Matrix, Light Filament current,Protective earth, PT100, Resistance and User-Interface test types use the following parameters in addition:

Key word	Explanation
ErrorStartCondition	Condition for switching forward in the event of an error.
ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
ErrorStateChangeBits	Always 0, never used.
ErrorWSBDelay	Delay of switching further in the event of an error.
ErrorWSBTimeValid	Delay time active.

5.1.1.2.1 Key words of the Protective earth test type

The Protective earth test type additionally uses the following key words:

Key word	Explanation
U	Idle voltage
I	Test current
R_max	Upper threshold value of the resistance.
t	Test time
f	Frequency of the voltage
EN60204	Indication whether the test is performed in accordance with EN 60204. Always 0.
DC_Enable	Indicates whether the test is carried out with direct current voltage. 0: Alternating current 1: Direct current

5.1.1.2.2 Key words of the High Voltage AC test type

The **High voltage AC** test type additionally uses the following key words:

Key word	Explanation
U	Test voltage
I_min	Lower threshold
I_max	Upper threshold
t	Test duration
Ramp	Indicates whether the ramp is active.
U_start	Start voltage
t_up	Increase time of the ramp. This parameter is only valid if the ramp is active.
t_down	Drop time of the ramp. This parameter is only valid if the ramp is active.
f	Frequency of the voltage
Quelle	Selected current source. This parameter is only used in the event of a hot high voltage.
f_Source	Frequency of the source. This parameter is only used in the event of a hot high voltage.
U_Source	Voltage of the source. This parameter is only used in the event of a hot high voltage.
Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Auswertung	Type of the analysis of the test. 0 = end the test time 1 = end with start signal
CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in **CreateLog** is 1.

5.1.1.2.3 Key words of the High voltage DC test type

The **High voltage DC** test type additionally uses the following key words:

Key word	Explanation
U	Test voltage
I_min	Lower threshold
I_max	Upper threshold
t	Test duration
Ramp	Indicates whether the ramp is active.
U_start	Start voltage
t_up	Increase time of the ramp. This parameter is only valid if the ramp is active.
t_down	Drop time of the ramp. This parameter is only valid if the ramp is active.
U_discharge	Discharge voltage
Quelle	Selected current source. This parameter is only used in the event of a hot high voltage.
f_Source	Frequency of the source. This parameter is only used in the event of a hot high voltage.
U_Source	Voltage of the source. This parameter is only used in the event of a hot high voltage.
Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Auswertung	Type of the analysis of the test. 0 = end the test time 1 = end with start signal
CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Timeinterval	Time interval between two samples which will be written to the log file. The

Key word	Explanation
	value is in seconds. This value will only be used in case the value in `CreateLog` is 1.
`CheckCurrentInRamp`	During a HVDC7 test the current will be checked against the limit Imax also during executing a ramp.

5.1.1.2.4 Key words of the Insulation test type

The `Insulation` test type additionally uses the following key words:

Key word	Explanation
`U`	Test voltage
`R_min`	Lower threshold of the insulation resistance.
`t`	Test duration
`Ramp`	Indicates whether the ramp is active.
`U_start`	Start voltage
`t_up`	Increase time of the ramp. This parameter is only valid if the ramp is active.
`t_down`	Drop time of the ramp. This parameter is only valid if the ramp is active.
`U_discharge`	Discharge voltage
`Quelle`	Selected current source. This parameter is only used in the event of a hot high voltage.
`f_Source`	Frequency of the source. This parameter is only used in the event of a hot high voltage.
`U_Source`	Voltage of the source. This parameter is only used in the event of a hot high voltage.
`Management`	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
`Auswertung`	Type of the analysis of the test. 0 = end the test time 1 = end with start signal

Key word	Explanation
CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.

5.1.1.2.5 Key words of the FCT-Current test type

The FCT-Current test type additionally uses the following key words:

Key word	Explanation
U_Source	Source of the test supply.
U	Voltage of the test item supply
I_min	Lower threshold value during the analysis. Not valid if the analysis is set to Pass/Fail. The unit and thresholds depend on the channel.
I_max	Upper threshold value during the analysis. Not valid if the analysis is set to Pass/Fail. The unit and thresholds depend on the channel.
t	Test time
f	Frequency of the voltage
t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
t_timeout	Timeout for the start of the analysis. The value is not used for all start scenarios.
Gradient	Gradient for the start of the analysis. This value is not used for all start scenarios.
Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on

Key word	Explanation
Scenario	Type of the start of the analysis
Auswertung	Type of the analysis 0 = measurement 1 = Pass/Fail button
Kanal	Measurement channel 0 = current 1 = analogue channel1 2 = analogue channel2 3 = analogue channel3 4 = analogue channel4 5 = voltage measurement
SourceIsDC	External source provides direct current voltage
Graphic	Type of the graphics settings 0 = no graphics 1 = only display graphic 2 = display and save graphic
CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
UseAnalogConversion	This check box inidcates whether the analog input will be converted to customer specific units. 0 = No conversion 1 = Do conversion
ConversionOffset	Value of the physical value when the voltage has valaue 0. This field is only valid when UseAnalogConversion has the value 1.
ConversionGradient	Slope for the conversion of the voltage into the physical value. This field is only valid when UseAnalogConversion has the value 1.
PhysicalUnit	Physical unit of the customer specific conversion. This field is only valid when UseAnalogConversion has the value 1.

5.1.1.2.6 Key words of the Leakage current test type

The **Leakage current** test type additionally uses the following key words:

Key word	Explanation
Messmodell	Measurement model used.
Messmethode	Measurement method used. 0: Protective conductor current 1: Housing discharge current
Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
U_Source	Source of the test supply.
U	Voltage of the test item supply
I_max	Upper threshold for the discharge current.
t	Test time
f	Frequency of the voltage
t_start	Will not be used.
Auswertung	Measurement channel used for the test: 0: I AC rms 1: I DC 2: I min 3: I max 4: I rms
Polaritaet	Polarity used of the supply of the test item. For single-phase test item: 0: Automotive 1: L1-> PE 2: L2-> PE 3: Mode B 4: Automatic with first error 5: L1 -> PE with first error 6: L2 -> PE with first error With three-phase test item: 0: Clockwise rotation 1: Counterclockwise rotation
SelftestMode	Always 0
I_min	Lower threshold for the discharge

Key word	Explanation
	current.
Phase	Number of phases of the test item.
CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in **CreateLog** is 1.

5.1.1.2.7 Key words of the Sight check test type

The **Sight check** test type additionally uses the following key words:

Key word	Explanation
Abfrage	Mode for termination.

5.1.1.2.8 Key words of the Data input test type

The **Data input** test type additionally uses the following key words:

Key word	Explanation
EingabeMasken	Bit samples containing screen fields instead of requirements.

5.1.1.2.9 Key words of the Batch run test type

The **Batch run** test type additionally uses the following key words:

Key word	Explanation
SettingFlags	Settings that indicate that certain fields are configured at other locations. This field is bit coded.
EingabeMasken	Bit samples containing screen fields instead of requirements.

5.1.1.2.10 Key words of the User-Interface test type

The **User-Interface** test type additionally uses the following key words:

Key word	Explanation
In	Entry bits

Key word	Explanation
InMask	Mask for entry bits.
Out	Output bits
OutMask	Mask for output bits.
Duration	Duration of the output pulse.
Timeout	Timeout when waiting for the status of the entry bits. This parameter is only valid if the TimeoutEnable parameter is set.
TimeoutEnable	States whether timeout is used. 0: Timeout is not used 1: Timeout is used
NumInterface	Number of the user IO interface used. 0: User-IO Interface of the internal IO-CPU 1: User-IO Interface of the external IO-CPU

5.1.1.2.11 Key words of the Resistance test type

The Resistance test type additionally uses the following key words:

Key word	Explanation
t	Test time
R_min	Lower threshold value of the resistance.
R_max	Upper threshold value of the resistance.
R_offset	Resistance of the measurement structure.
t_timeout	Maximum time after starting until the first measurement value is recorded.

5.1.1.2.12 Key words of the Continuity test type

The Continuity test type additionally uses the following key words:

Key word	Explanation
TestVoltage	Maximum test voltage used for the measurement.
TestTime	Time after that the measurement will be evaluated.
MaxTestCurrent	Maximum current during the test.
Limit	Limit for the evaluation.

Interpretation	Evaluation of the measurement: 1: Pass on continuity 2: Pass on discontinuity
TypeOfSource	Type of the used source: 0: Alternating current 1: direct current

5.1.1.2.13 Key words of the PT100 test type

The PT100 test type additionally uses the following key words:

Key word	Explanation
T_min	Lower threshold for the temperature.
T_max	Upper threshold for the temperature.
R_offset	Resistance of the measurement structure.
R0	Basic resistance of the measurement sensor.

5.1.1.2.14 Key words of the Lightcontrol test type

The Lightcontrol test type additionally uses the following key words:

Key word	Explanation
Leuchte_ART	Type of the light
Leuchte_BEFEHL	Command to the light
Leuchte_DIM	Dim value
Leuchte_DALIC	DALIC
Leuchte_DALIV	DALIV
Leuchte_DIMT	DIMT

5.1.1.2.15 Key words of the Dummy load test type

The Dummy load test type additionally uses the following key words:

Key word	Explanation
Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
U_Source	Source of the test supply.

Key word	Explanation
U	Voltage of the test item supply
f	Frequency of the voltage
Channels	Number of channels
RGas	Gas resistance
RCoil	Coil resistance
Filament_enable	Active flame
Filament_t	Active flame
Filament_delay	Flame delay
Filament_I	Current of the flame
Ignition_enable	Ignition available
Ignition_t	Ignition time
Ignition_delay	Ignition delay
Ignition_U	Ignition voltage
Fct_enable	Function available
Fct_t	Duration of the function
Fct_delay	Delay of the analysis
Fct_Imin	Lower threshold value of the current
Fct_Imax	Upper threshold value of the current
t_timeout	Always 0
Filament_Imax	Max. current of the flame

5.1.1.2.16 Key words of the Light Filament current test type

The **Light Filament current** test type additionally uses the following key words:

Key word	Explanation
Management	Indicates how to proceed after the test with supplying the test item. 0: Deactivate 1: Activate
Filament_enable	Active flame
Filament_t	Active flame
Filament_delay	Flame delay
Filament_I	Current of the flame
Filament_Imax	Max. current of the flame

5.1.1.2.17 Key words of the External programm test type

The **External program** test type additionally uses the following key words:

Key word	Explanation
SettingFlags	Settings

5.1.1.3 Key words of the test step measurement values

Every test step has the following fields:

Key word	Explanation
COUNTIO	Number of times this step was successfully carried out.
COUNTNIO	Number of times not carried out successfully.
COUNTERR	Number of cancelled tests.
CountTests	Total number of tests carried out.
StepCycleTime	Duration of the test.
Result	Result of the test step: **UnTested** -> This test step was not carried out during this test. **Active** -> Test step is active, cannot occur in the file. **IO** -> This test step was rated as IO. **NIO** -> This test step was rated as NIO. **ERROR** -> This test step was cancelled with an error. **Jumped** -> This test step was skipped.
dblResultValue1	Numeric measurement value in SI unit.
dblResultValue2	Numeric value of the test size in SI units.
strResultValue1	Formatted measurement value with a unit.
strResultValue2	Formatted test value with a unit.
strResultTestTime	Formatted duration of the test in seconds.
ERROR	Indication of the error when cancelling the measurement. **None** -> No error **Timeout_StartMeasurement** -> Time error when starting the measurement **Timeout_SetPassFail** -> not used **Timeout_MeasureTimeOvershoot** -> measurement time exceeded

Key word	Explanation
	Invalid_TestState -> invalid test status **Invalid_TestResult** -> invalid test result **Invalid_PVSteuerLT** -> invalid control word **Invalid_PVStatusPruefung** -> invalid status of the test **Invalid_TestParameter** -> invalid test parameter **Cancel** -> cancelled
ERRORinfo	Expanded error number.
TestingUser	User loged in during the test step.
SightCheckInputText	User entry during the visual inspection.

5.1.1.4 Key words of the multiple test values test step

Every multiple test has the following fields:

Key word	Explanation
dblTestResult	Result value of the multiple test in the SI unit. This field contains only a figure value.
strTestResult	Result value as text.
TestPoint	User input for the multitest.
MultitestUser	User loged in during the multitest.

5.1.1.5 Key words of the test step advices

Every test step has the following fields:

Key word	Explanation
TextCount	Always 3
Text_0	Text to be output with indication beforehand.
TextEnable_0	Activation of the output with indication beforehand.
TextSize_0	Font size with indication beforehand.
Picture_0	File name of the image with indication beforehand. If the file can be reached via a relative path from the folder of the plan files,

Key word	Explanation
	the relative path is entered, otherwise the absolute path is entered.
Outputtype_0	Image or text display with indication beforehand. Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
OutputSize_0	Small or large display with indication beforehand Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text. **BildKlein** displays the small window with the image. **BildGroß** displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.
Text_1	Text to be output with indication during.
TextEnable_1	Activation of the output with indication during.
TextSize_1	Font size with indication during.
Picture_1	File name of the image with indication during. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Outputtype_1	Image or text display with indication during Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image.

Key word	Explanation
	TextWithInputField displays the text and an input field.
OutputSize_1	Small or large display with indication during. Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text. **BildKlein** displays the small window with the image. **BildGroß** displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.
Text_2	Text to be issued in the event of error.
TextEnable_2	Activation of the output in the event of an error.
TextSize_2	Font size in the event of an error.
Picture_2	File name of the image in the event of an error. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Outputtype_2	Image or text display in the event of an error. Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
OutputSize_2	Small or large display in the event of an error. Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text.

Key word	Explanation
	BildKlein displays the small window with the image. **BildGroß** displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.

5.1.1.6 Key words of the test step process control

Every test step has the following fields:

Key word	Explanation
Test	Non-localised name of the test step.
TestName	Localised name of the test step.
TestNameAbbr	Short name of the test step.
Execute	Indicates whether the test step is to be carried out. The value is always **true**. The value is reserved for future purposes.
InvertResult	The result valuation IO and NIO is replaced. This field is only used for dummy tests.
View	Indicates whether the test step is to be displayed. The value is reserved for future purposes.
Jump_IO_Mode	Indicates how the jump is to be carried out in the event of an IO event of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_IO_Jump	Indicates the jump destination in the event of an IO result of the test step.
Jump_IO_Repeat	Indicates how often the test step is to be repeated in the event of an IO result of the test step. This value is always 0.
Jump_NIO_Mode	Indicates how the jump is to be carried out in the event of an NIO event of the test step.

Key word	Explanation
	0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_NIO_Jump	Indicates the jump destination in the event of an NIO result of the test step.
Jump_NIO_Repeat	Indicates how often the test step is to be repeated in the event of an NIO result of the test step.
Jump_Error_Mode	Indicates how the jump is to be carried out in the event of an error of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination This value is always 1.
Jump_Error_Jump	Indicates the jump destination in the event of an error of the test step.
Jump_Error_Repeat	Indicates how often the test step is to be repeated in the event of an error of the test step. This value is always 0.
Jump_Cancel_Mode	Indicates how the jump is to be carried out in the event of a cancellation of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_Cancel_Jump	Indicates the jump destination in the event of a cancellation of the test step.
Jump_Cancel_Repeat	Indicates how often the test step is to be repeated in the event of a cancellation of the test step. This value is always 0.
TestStep	Sequential number of the step.

5.1.2 HTML templates

HTML templates can be created and edited with any program that is able to save in the file type. Depending on the program, you must observe corresponding framework conditions.

Problematic in this context is that some programmes break down the key words into parts when editing them and insert formatting instructions. In this case, the key word is no longer identified.

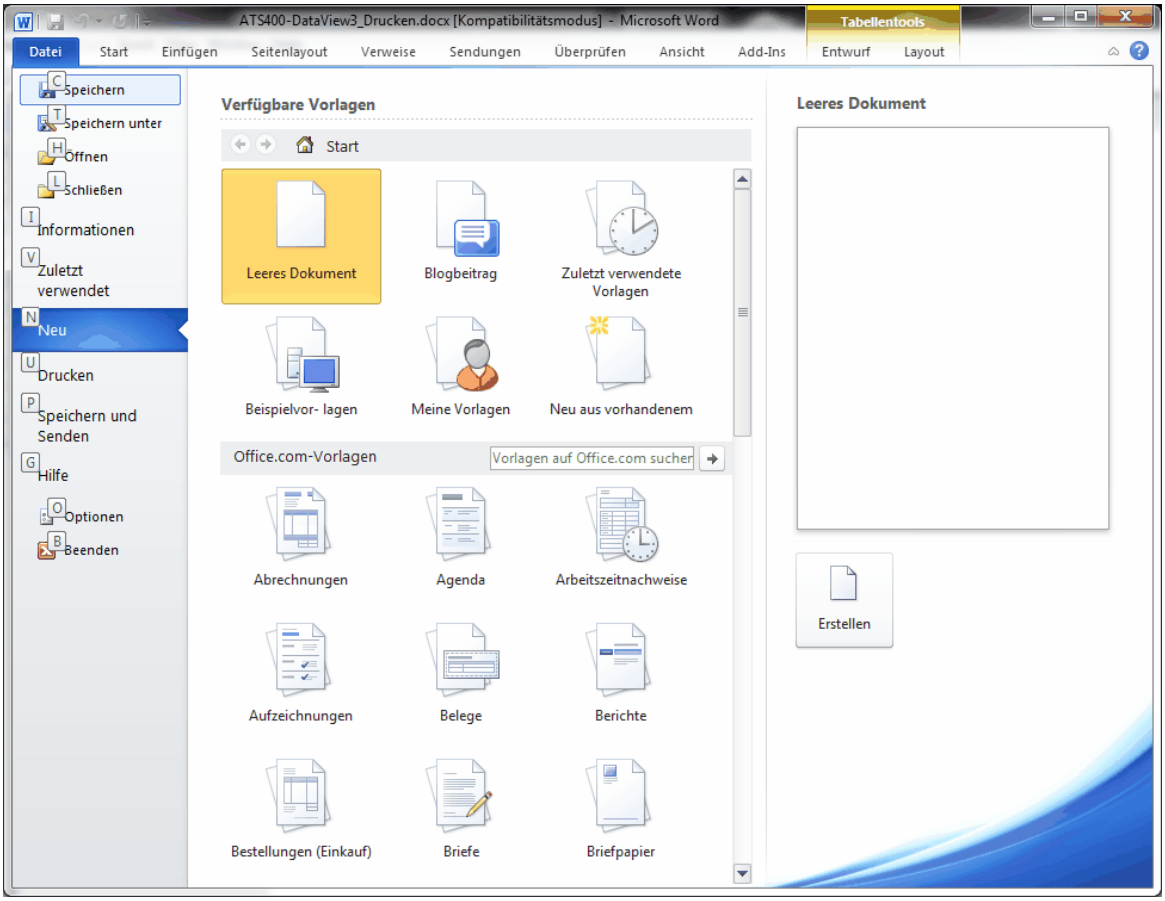
Use the HTML template; for the **Printer** or **Save as PDF** report option, the settings of the local Internet Explorer and of the printer are also required. The header and footer can be configured in the **Internet Explorer** in the **Page Setup** dialogue. The settings for the side orientation and paper size are made in the printer. The side edges must be set in the registration database with the **RegEdit** program from **Microsoft Windows**.

Creation with Microsoft Word 2010

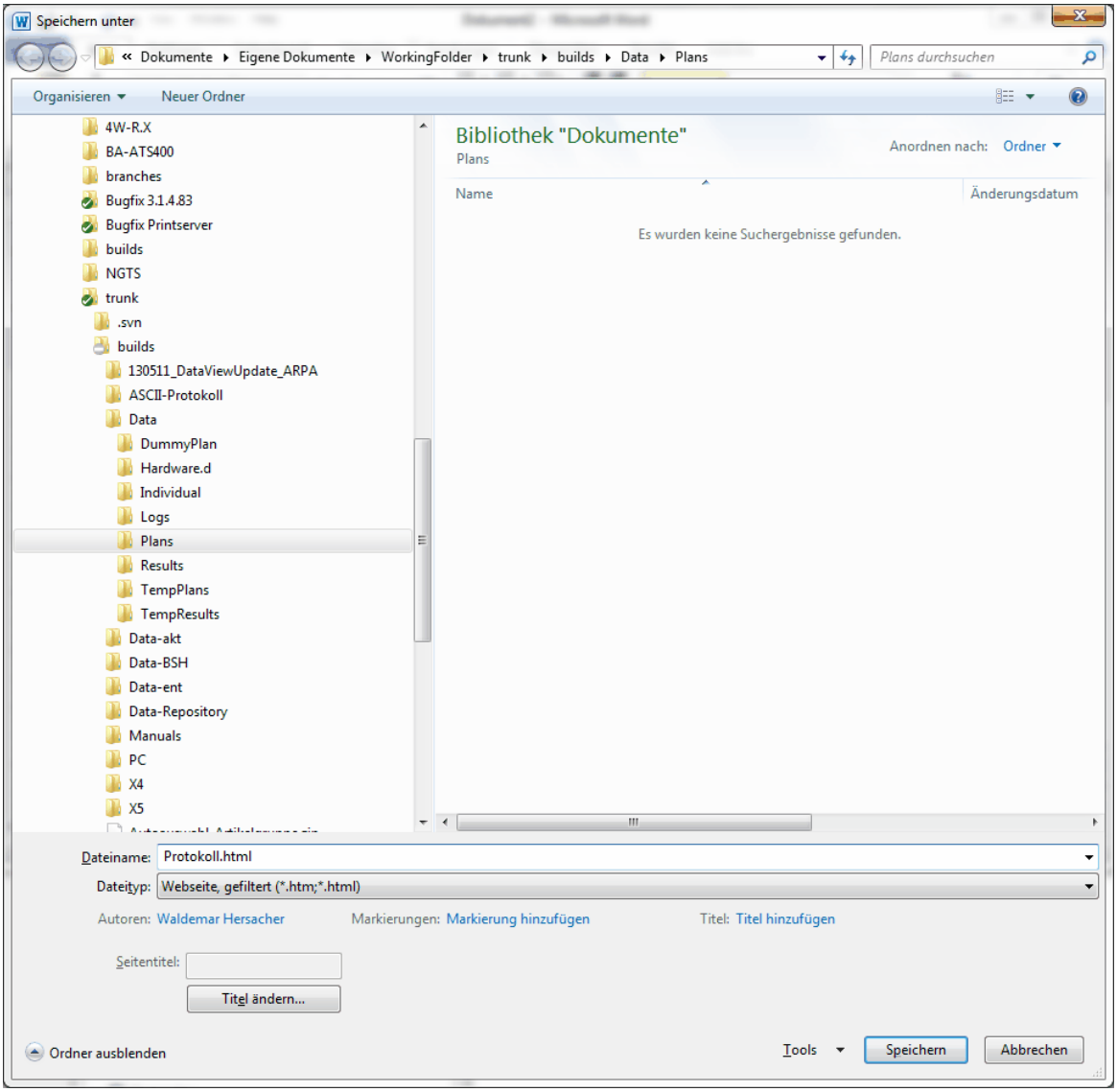
Creation with Open Office Writer

5.1.2.1 Creation with Microsoft Word 2012

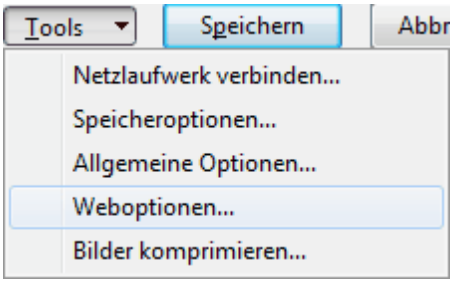
Create a new empty document or use a template already created by you.



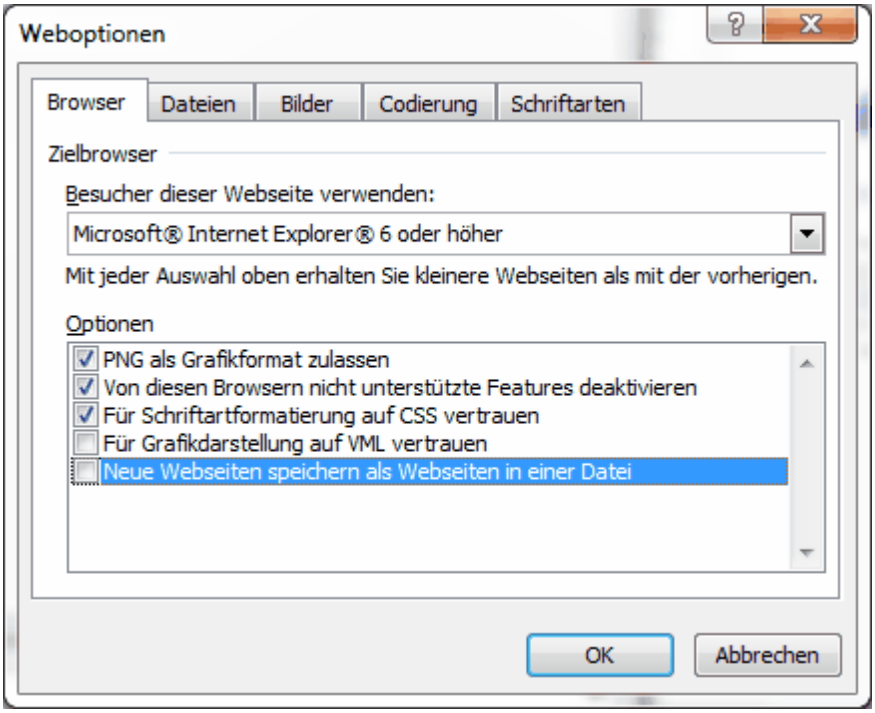
Save this document with **Save as** as a **Website, filtered (*.htm;*.html)** oder **website (*.htm;*.html)**. Note that you must edit the extension suggested from **htm** to **html** after setting all options.



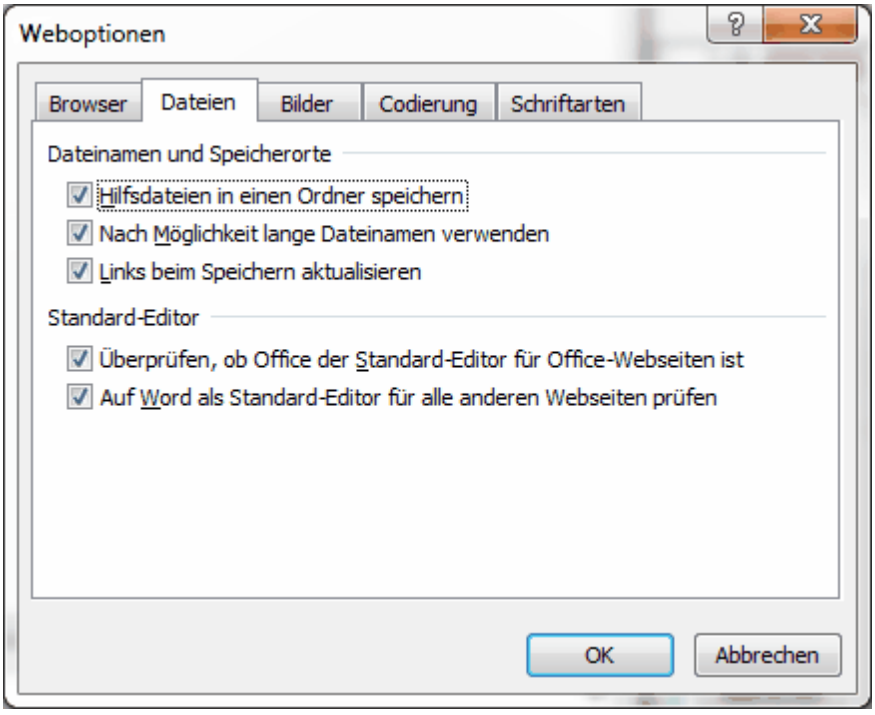
Under **`Tools`** open the dialogue **`Web options...`**.



In the **`Browser`** tab, deactivate the **`Save new websites as websites in a file`** option.



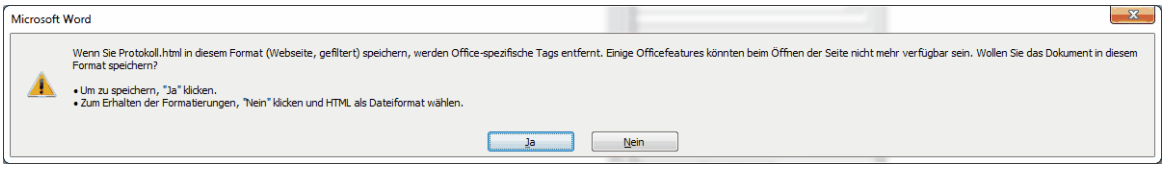
In the **Files** tab, activate the **Save help files in a folder** option.



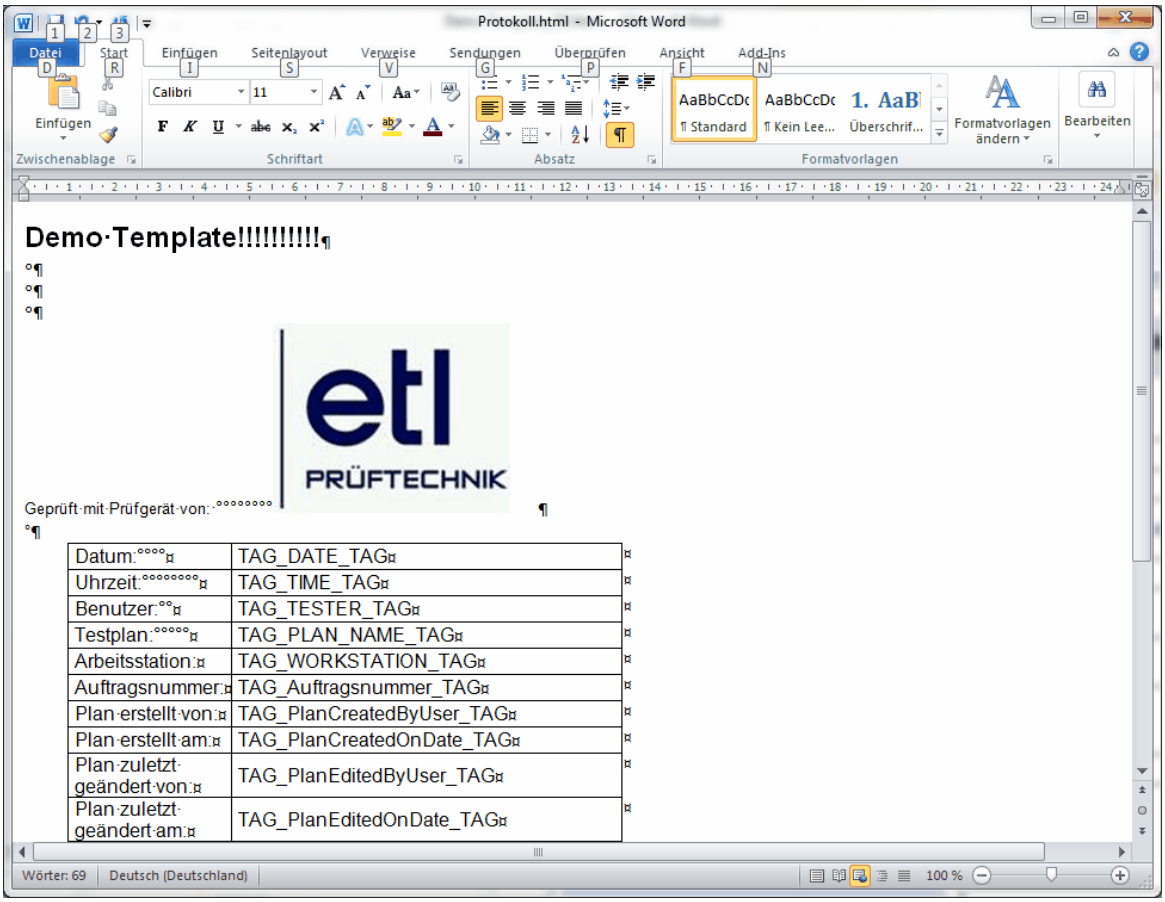
In the **Coding** tab, select from the **Save document as** selection the **Unicode (UTF8)** entry.

If you have selected **Website, filtered (*.htm;*.html)** you are given the

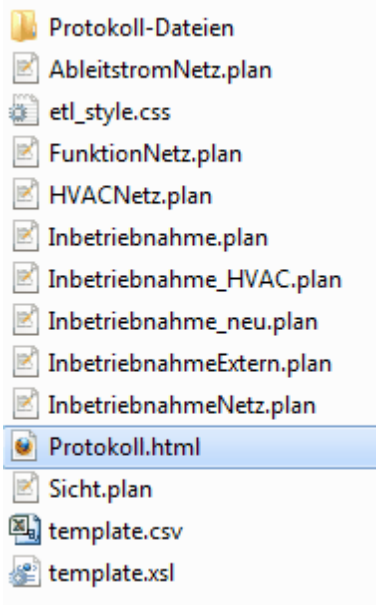
following warning. Click on the **Yes** button.



Create your report.



If you save the report, you are given a file and a folder. The help files can be found in the folder. If you need to copy or move the template, you always also need to copy or move the folder with it.



5.1.3 CSV templates

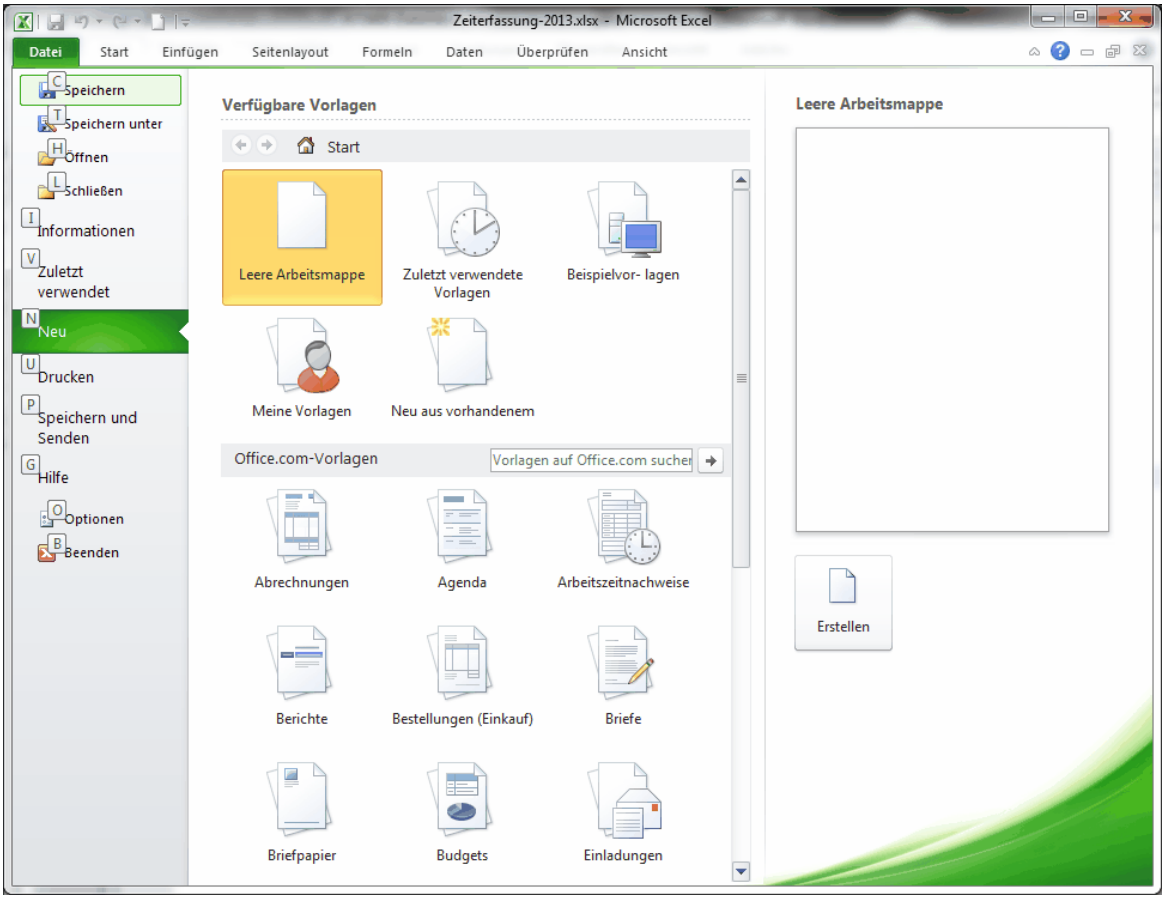
CSV is a text-based table format. You can edit it with every text editor or with most table calculations. If you do not use Microsoft Excel, it must be ensured that ISO-8859-15 is used as the character coding. If you create CSV files with the **ATS400 X4** or **ATS400 X5** device variants, it must be a 7-bit ASCII, which means that the illustration is compatible. In this case, no umlauts may be used.

Creation with Microsoft Excel 2010

Creation with Open Office Calc

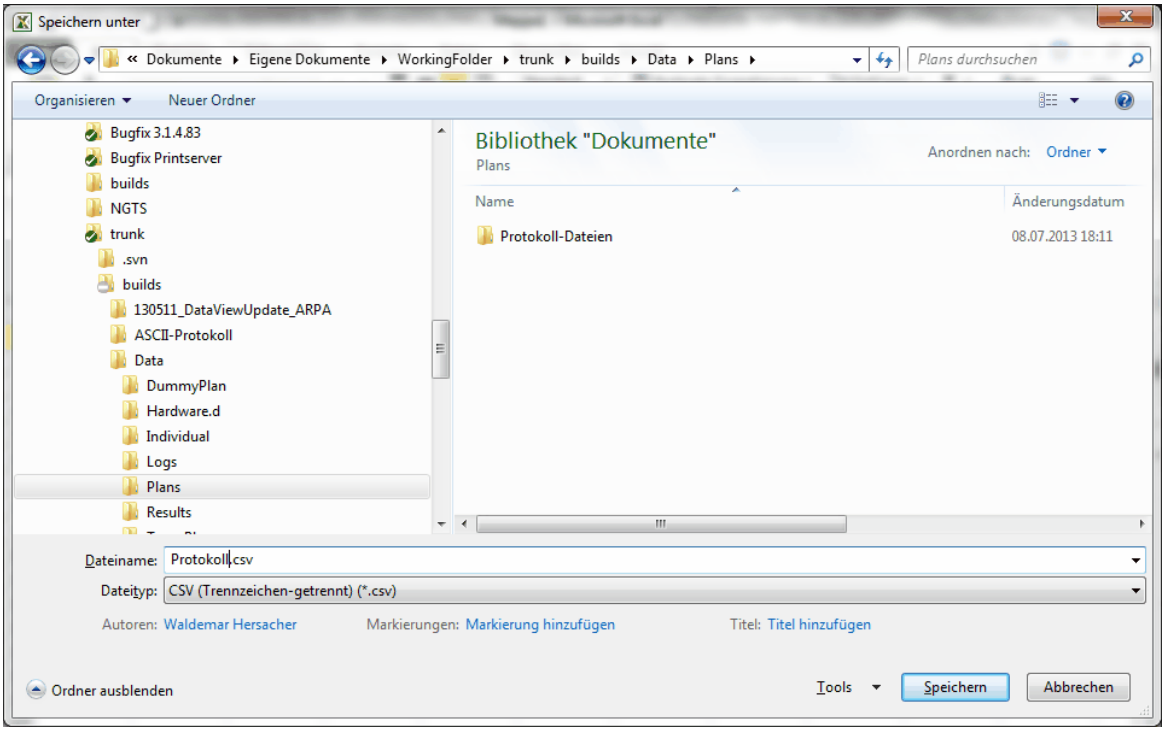
5.1.3.1 Creation with Microsoft Excel 2010

Create a new empty document or use a template already created by you.

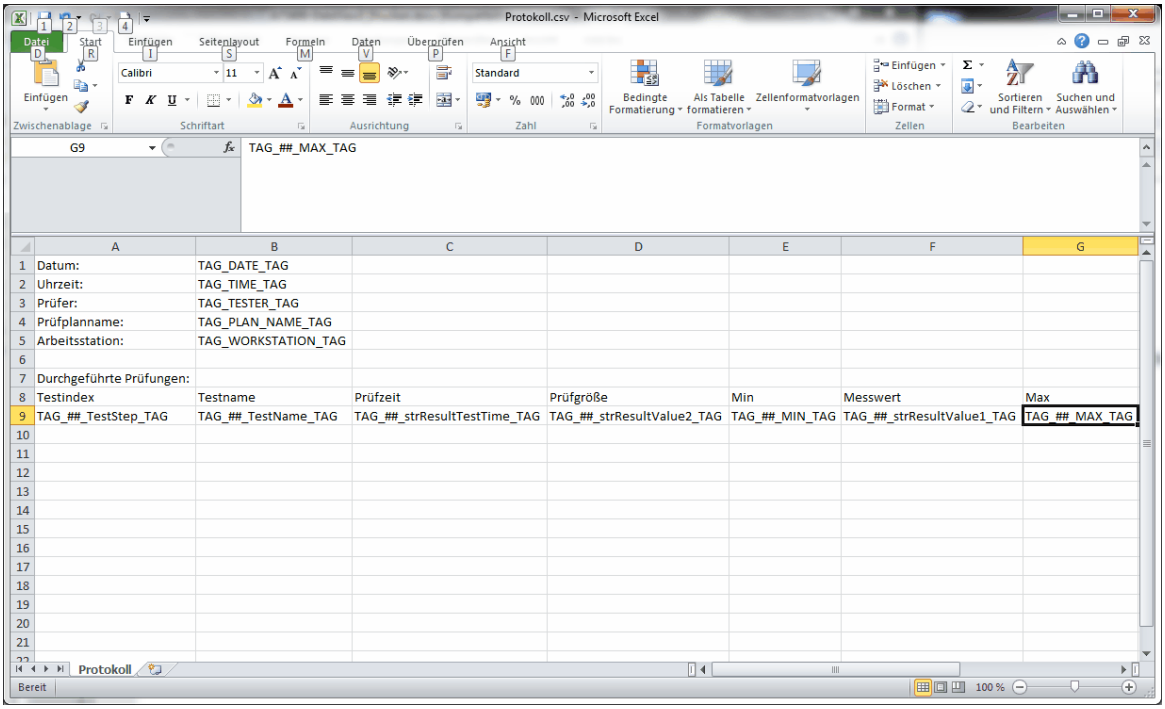


Delete all worksheets except for the first one.

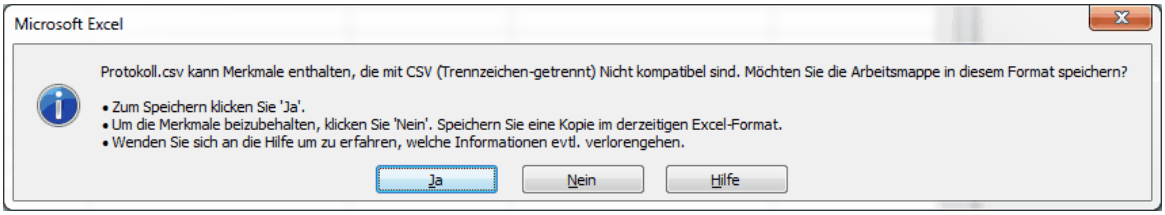
Save this document using **`Save as`** as a **`CSV (separator-separated) (*.csv)`**.



Create your report.



When saving, information is displayed to you. Click on the Ok button to save.


Microsoft Excel
Protokoll.csv kann Merkmale enthalten, die mit CSV (Trennzeichen-getrennt) Nicht kompatibel sind. Möchten Sie die Arbeitsmappe in diesem Format speichern?
• Zum Speichern klicken Sie 'Ja'.
• Um die Merkmale beizubehalten, klicken Sie 'Nein'. Speichern Sie eine Kopie im derzeitigen Excel-Format.
• Wenden Sie sich an die Hilfe um zu erfahren, welche Informationen evtl. verlorengehen.
Ja
Nein
Hilfe

6 Reference

This area describes all files used by **ETL DataView 3** that are managed or created within **ETL DataView 3**.

6.1 Patterns

At various places in the configuration patterns can be used. This patterns are used similar to regular expressions.

A pattern consists of characters which have a special meaning. The following patterns are defined:

Description
one character, e. g. *A*
a string, e. g. *Text*
a letter (a-z, A-Z)
a cipher (0-9)
an alphanumerical letter (a-z, A-Z, 0-9, _)
exact this character, e. g. *\W* at tis place a *W* is expected
Extract the enclosed characters. Is used in the automatic test plan selection. It is not allowed to nest parantheses into each other.

Examples:

Description
It is expected to enter 6 ciphers, e. g. *202201*

	Description
	It is expected to enter 4 ciphers, a space and 4 ciphers, e. g. *0112 1000*
	It is expected to enter 6 ciphers, a space, 4 ciphers, a space and 4 ciphers, e. g. *202201 0112 1000*
	It is expected to enter 3 letters and two ciphers , e. g. *Typ25*

6.2 Protective earth test

The PE-measurement is realized int 4-wire technic. This means that the measurement cables have different wires for the current (source) and the voltage measurement (sense). These are connected together directly at the measurement point. Therefore the resistance of the measurement cable does not influence the result. This is true only for the effective resistance of the measurement cable but not for the inductivity and the resulting apperent resistance. Especially with small test resistance and

unfavourable installation could this lead to measure an increased resistance.

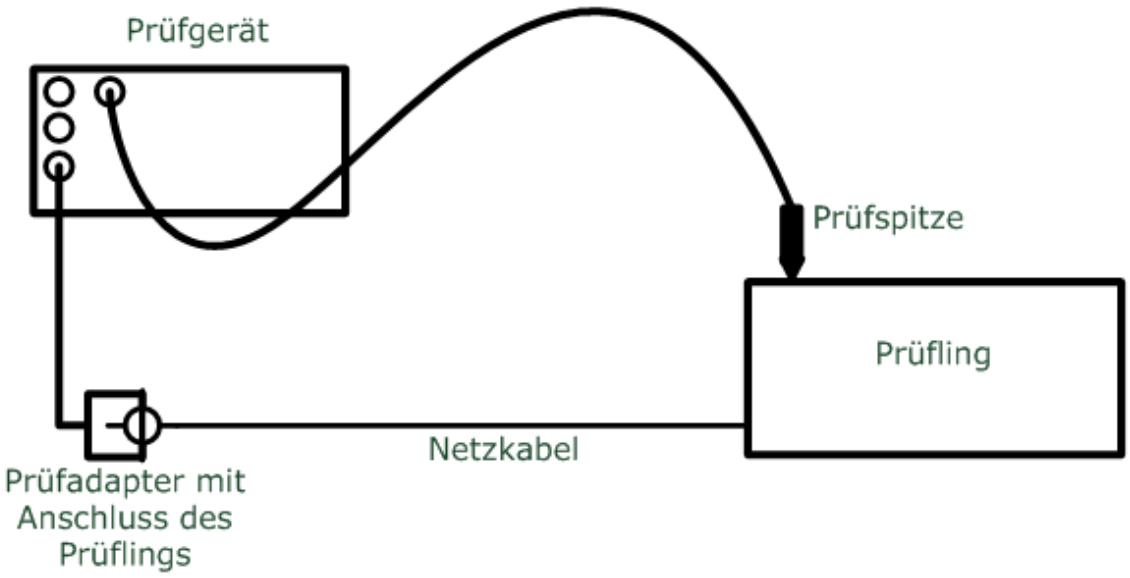
The resistance of the unit under test is normally a effective resistance. Errors resulting from the inductivity of the measurement cables will decrease with higer resistance of the unit under test. An apperent resistance of 10 mΩ for the measurement cable and 10 mΩ for the unit under test results in a measurement of 14 mΩ. With a unit under test of 50 mΩ the result will be 51 mΩ and with 100 mΩ it will be 100,5 mΩ.

In the case the inductivity of the measurement cable is disturbant the inductivity should be kept small. To achive this keep the aerea between the measurement cables small.

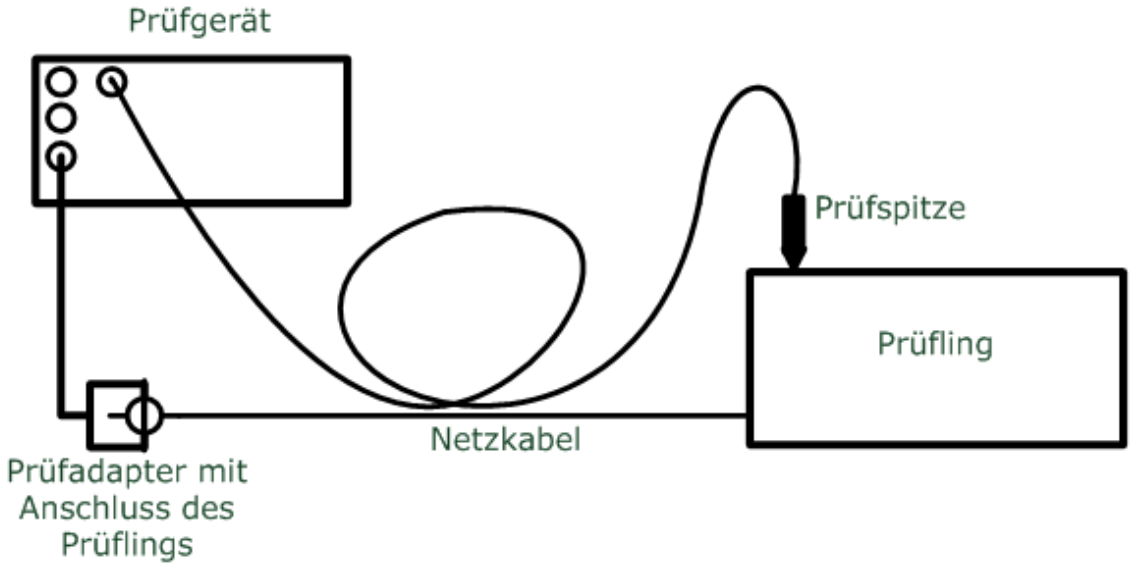
Additonally you must take care of a sufficent contact pressure to keep the contact resistance small.

6.2.1 Leading of the cable

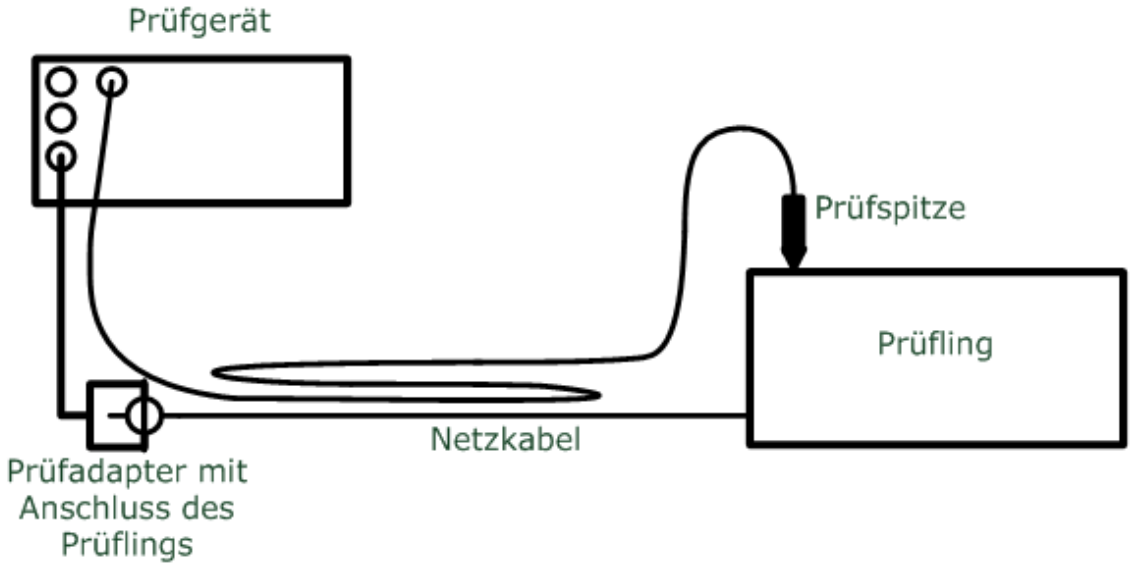
Some examples for leading of the wires.



Unfavourable leading of the measurement cable. A large aerea is spanned between the both measurement cables and therefore the apperant resistance will increase.



Also unfavourable leading of the measurement cables. The aerea between the measurement cables is smaller but the apperant resistance will increase due to the loop.



Favourable leading of the measurement wires. The aerea between the measurement cables is small keeping the apperant resistane small.

6.3 High voltage test

For the **ATS400** three groups of high voltage test modules are offered. These will be named in the following with there short names. The short name HVDC will be used if the text is valid for the HVDC7 and HVDC3 module.

Short name	Module
HVAC	Test with alternate current.
HVDC7	Test with direct current. These modules have a testing voltage of 5 KV or more.
HVDC3	Test with direct current. These modules have a testing voltage up to 3600 Volt and are current limited.

Informations for configuration of the high voltage test you will find for HVAC-Test, the HVDC7-Test and the HVDC3-Test in the part test plan editing.

6.3.1 Evaluation of the measurement

6.3.1.1 Error messages for high voltage AC

Value	Description
0	No error
16	Upper current limit exceeded.
17	Break through deteced with peak current.
18	Testing voltage not reached.
19	Lower current limit not reached.
20	Break through in ramp. Limit for spark detection exceeded.
21	Upper current during ramp exceeded.
22	Break through during static phase. Limit for spark detection exceeded.
23	Upper current limit during static phase exceeded.
24	Break through in ramp. Gradient for spark detection exceeded.
25	Break through during static phase. Gradient for spark detection exceeded.

6.3.1.2 Error messages for high voltage DC

Value	Description
0	No error
32	Upper current limit exceeded.
33	Break through deteced with peak current.

Value	Description
34	Lower current limit not reached.
35	Break through.
36	Testing voltage not reached.
37	Break through in ramp. Limit for spark detection exceeded.
38	Upper current during ramp exceeded.
39	Break through during static phase. Limit for spark detection exceeded.
40	Upper current limit during static phase exceeded.
41	Break through in ramp. Gradient for spark detection exceeded.
42	Break through during static phase. Gradient for spark detection exceeded.

6.3.1.3 Test for required voltage

After powering on resp. at the end of the ramp when the current voltage does not change any more it is checked that the current voltage has reached more than 95% of the voltage in parameter **Test voltage**.

6.3.1.4 Current error at upper limit

This error will be detected when the measured current exceeds the current in parameter **Maximum Current**.

This evaluation will be done in the following cases:

Phase	HVAC	HVDC
Rising ramp	Yes	No
Static	Yes	Yes
Falling ramp	Yes	No

6.4 Results files

The results files have the extension **.result**. The place of saving and the file name result from the details in **Settings** -> **File storage** -> **Result**. This file has the format of an XML file with UTF-8 coding with BOM.

<ResultData> is the enclosing tag.
<ResultData>/<Header> contains the header data.
<ResultData>/<Identification> contains the identifications.
<ResultData>/<TestSteps> contains the list of test steps.
<ResultData>/<TestSteps>/<TestStep Index="n"> contains a test step. The number in **Index** is incremented for every test step.
<ResultData>/<Result> contains the overall result as well as the data of the

automatic test plan selection.
<ResultData>/PlanOptionen> contains the options of the test plan.
<ResultData>/PlanOptionen>/<ReportOptionen> contains the list of reports to be created.
<ResultData>/PlanOptionen>/<ReportOptionen>/<ReportOption> contains the report settings for a report.
<ResultData>/<Validation> contains validation data.

6.4.1 Header

The data in this block can be found under **<ResultData>/<Header>**.

Tag	Explanation
DataView_Version	Version of **ETL DataView 3** with which this file was created.
TestPlan_Version	Version of the format of the file.
PlanName	Name of the test plan, is filled with the file name when being created.
PlanPath	Relative path to the application where the test plan was saved.
PlanDescription	Description of the test plan. This value can be entered by the user in **Settings** -> **Text**.
PlanCreatedByUser	User who created the test plan first. If user administration is not active, the field is empty.
PlanCreatedByWorkstation	Test station where the test plan was created. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
PlanCreatedOnDate	Date of creating the test plan. The date is in the format in accordance with the country settings valid at this moment in time.
PlanEditedByUser	User who modified the test plan last. If user administration is not active, the field is empty.
PlanEditedByWorkstation	Test station where the test plan was modified last. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
PlanEditedOnDate	Date of modifying the test plan. The date is in the format in accordance with the country settings valid at this moment in time.
FileSavedByUser	User who saved the test plan or the result file.
FileSavedByWorkstation	Test station where the test plan or the result file was saved. The name of the test station can be stated in **Settings** -> **Workstation** -> **Base settings**.
FileSavedOnDate	Date of saving the test plan or the result file. The date is in the format in accordance with the country

Tag	Explanation
	settings valid at this moment in time.
PlanIdentificationEnabled	The <ResultData>\<Identification> block exists.
PlanBatchEnabled	Intended for future purposes.
PlanTestSteps	Number of test steps in the test plan.

6.4.2 Identification

The data in this block can be found under <ResultData>/<Identification>.

Tag	Explanation
IDs	Number of IDs.
ID_n	Identification for the test plan. The tags are numbered from 0 to the number of IDs - 1, i.e. have the values ID_0, ID_1, etc.

6.4.3 Teststeps

The data in this block can be found under <ResultData>/<TestSteps>.

This block contains a list of the individual test steps. Every test step is a block of its own.

6.4.3.1 TestStep

The data in this block can be found under <ResultData>/<TestSteps>/<TestStep Index="n">.

Attribute	Explanation
Index	Index of the test step, counting starts from 0

Tag	Explanation
Test	ID of the test type
TestName	Non-localised name of the test step.
Execute	Indicates whether the test step is to be carried out. The value is always true. The value is reserved for future purposes.
InvertResult	The result valuation IO and NIO is replaced. This field is only used for dummy tests.
View	Indicates whether the test step is to be displayed. The value is reserved for future purposes.
Parameter	Number of parameters of this test step. The number of parameters depends on the test step.

Tag	Explanation
Parameter_n	Parameter of the test step. These parameters are explained individually for every test type.
Jump	This fields always has the value Jump.
Jump_IO_Mode	Indicates how the jump is to be carried out in the event of an IO event of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_IO_Jump	Indicates the jump destination in the event of an IO result of the test step.
Jump_IO_Repeat	Indicates how often the test step is to be repeated in the event of an IO result of the test step. This value is always 0.
Jump_NIO_Mode	Indicates how the jump is to be carried out in the event of an NIO event of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_NIO_Jump	Indicates the jump destination in the event of an NIO result of the test step.
Jump_NIO_Repeat	Indicates how often the test step is to be repeated in the event of an NIO result of the test step.
Jump_Error_Mode	Indicates how the jump is to be carried out in the event of an error of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination This value is always 1.
Jump_Error_Jump	Indicates the jump destination in the event of an error of the test step.
Jump_Error_Repeat	Indicates how often the test step is to be repeated in the event of an error of the test step. This value is always 0.
Jump_Cancel_Mode	Indicates how the jump is to be carried out in the event of a cancellation of the test step. 0 -> Next step 1 -> Go to the end 2 -> Go to a jump destination
Jump_Cancel_Jump	Indicates the jump destination in the event of a cancellation of the test step.
Jump_Cancel_Repeat	Indicates how often the test step is to be repeated in the event of a cancellation of the test step. This value is always 0.
Text	Immer 3.

Tag	Explanation
Text_0	Text to be output with indication beforehand.
TextEnable_0	Activation of the output with indication beforehand.
TextSize_0	Font size with indication beforehand.
Picture_0	File name of the image with indication beforehand. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Outputtype_0	Image or text display with indication beforehand. Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
OutputSize_0	Small or large display with indication beforehand Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text. **BildKlein** displays the small window with the image. **BildGroß** displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.
Text_1	Text to be output with indication during.
TextEnable_1	Activation of the output with indication during.
TextSize_1	Font size with indication during.
Picture_1	File name of the image with indication during. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Outputtype_1	Image or text display with indication during Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
OutputSize_1	Small or large display with indication during. Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text. **BildKlein** displays the small window with the image.

Tag	Explanation
	BildGroß displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.
Text_2	Text to be issued in the event of error.
TextEnable_2	Activation of the output in the event of an error.
TextSize_2	Font size in the event of an error.
Picture_2	File name of the image in the event of an error. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Outputtype_2	Image or text display in the event of an error. Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
OutputSize_2	Small or large display in the event of an error. Values used: **TextKlein** displays the small window for the text. **TextGroß** displays the large window for the text. **BildKlein** displays the small window with the image. **BildGroß** displays the large window with the image. **TextMitEingabeFeldKlein** displays the small window for the text and the input field. **TextMitEingabeFeldGroß** displays the large window for the text and the input field. **Nichts** displays no field.
Tags	Number of the field names of the test step. This value is 0, except for the batch and data input test steps.
TagName_n	Name of the field. The **n** postfix corresponds to the number of the field counted from 0. This entry only exists if **Tags** is not equal to 0.
TagData_n	Pre-occupation or sample of the field. The **n** postfix corresponds to the number of the field counted from 0. This entry only exists if **Tags** is not equal to 0.
Template	Outdated, is no longer used.
Show	Indicates whether a user notice is displayed before the multiple test.
Size	Font size of the text for a multiple test.

Tag	Explanation
Text	Text to be issued in the event of a multiple test.
Display	Image or text display in the event of a multiple test. Values used: **Text** displays the text only. **Bild** displays the image only. **TextBild** displays the text and the image. **TextWithInputField** displays the text and an input field.
PicturePath	File name of the image in the event of a multiple test. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
StepCycleTime	Duration of the test.
Count_Tests	Total number of tests carried out.
Count_IO	Number of times this step was successfully carried out.
Count_NIO	Number of times not carried out successfully.
Count_ERROR	Number of cancelled tests.
Result	Result of the test step: **UnTested** -> This test step was not carried out during this test. **Active** -> Test step is active, cannot occur in the file. **IO** -> This test step was rated as IO. **NIO** -> This test step was rated as NIO. **ERROR** -> This test step was cancelled with an error. **Jumped** -> This test step was skipped.
ResultValue_1	Numeric measurement value in SI unit.
ResultValue_2	Numeric value of the test size in SI units.
TestTime	Formatted duration of the test in seconds.
Error	Indication of the error when cancelling the measurement. **None** -> No error **Timeout_StartMeasurement** -> Time error when starting the measurement **Timeout_SetPassFail** -> not used **Timeout_MeasureTimeOvershoot** -> measurement time exceeded **Invalid_TestState** -> invalid test status **Invalid_TestResult** -> invalid test result **Invalid_PVSteuerLT** -> invalid control word **Invalid_PVStatusPruefung** -> invalid status of the test **Invalid_TestParameter** -> invalid test parameter **Cancel** -> cancelled

Tag	Explanation
ErrorInfo	Expanded error number.
TestPoint_n	User input for the multitest. The n post fix is counted upwards from 0.
TestingUser	User loged in during the test step.
SightCheckInputText	User entry during the visual inspection.
MultitestUser_n	User loged in during the multitest. The n post fix is counted upwards from 0.

6.4.3.1.1 Protective Earth

Parameters of the Protective Earth test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	U	Idle voltage
Parameter_3	I	Test current
Parameter_4	R_max	Upper threshold value of the resistance.
Parameter_5	t	Test time
Parameter_6	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_7	f	Frequency of the voltage
Parameter_8	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_9	EN60204	Indication whether the test is performed in accordance with EN 60204. Always 0.
Parameter_10	Polung	Contacting setting of an external relay matrix.
Parameter_11 bis Parameter_26	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The

Tag	Parameter	Explanation
		display is bit coded.
Parameter_27	StateChangeBits	Always 0, never used.
Parameter_28	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_29	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_30	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_31	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_32	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_33	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_34	ErrorStateChangeBits	Always 0, never used.
Parameter_35	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_36	ErrorWSBTimeValid	Delay time active.
Parameter_37	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_38	DC_Enable	Indicates whether the test is carried out with direct current voltage. 0: Alternating current 1: Direct current
Parameter_39	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_40	Repeating	Indicates how often the test step is carried out.
Parameter_41	StartButton	Indicates whether the Start button is displayed.
Parameter_42	PassButton	Indicates whether the Pass button is displayed.
Parameter_43	StartandJump	Indicates whether the Start and Jump buttons are displayed.

Tag	Parameter	Explanation
Parameter_44	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_45	StartPETime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_46	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_47	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.
Parameter_48	PassButtonVisible	Indicates whether the button Pass will be shown during a Multitest.

6.4.3.1.2 High voltage AC

Parameters of the High voltage AC test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	U	Test voltage
Parameter_3	I_min	Lower threshold
Parameter_4	I_max	Upper threshold
Parameter_5	t	Test duration
Parameter_6	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_7	Ramp	Indicates whether the ramp is active.
Parameter_8	U_start	Start voltage
Parameter_9	t_up	Increase time of the ramp. This parameter is only valid if the ramp is active.
Parameter_10	t_down	Drop time of the ramp. This parameter is only valid if the ramp is active.

Tag	Parameter	Explanation
Parameter_11	f	Frequency of the voltage
Parameter_12	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_13	Polung	Contacting setting of an external relay matrix.
Parameter_14 bis Parameter_29	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_30	StateChangeBits	Always 0, never used.
Parameter_31	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_32	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_33	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_34	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_35	Offset	Always 0, will not be used.
Parameter_36	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_37	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_38	ErrorStateChangeBits	Always 0, never used.
Parameter_39	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_40	ErrorWSBTimeValid	Delay time active.
Parameter_41	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_42	Quelle	Selected current source. This parameter is only used in the event of a hot high voltage.
Parameter_43	f_Source	Frequency of the source. This parameter is only used in the event of a hot high voltage.

Tag	Parameter	Explanation
Parameter_44	U_Source	Voltage of the source. This parameter is only used in the event of a hot high voltage.
Parameter_45	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_46	Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_47	Auswertung	Type of the analysis of the test. 0 = end the test time 1 = end with start signal
Parameter_48	Repeating	Indicates how often the test step is carried out.
Parameter_49	StartButton	Indicates whether the Start button is displayed.
Parameter_50	PassButton	Indicates whether the Pass button is displayed.
Parameter_51	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_52	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_53	CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Parameter_54	Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
Parameter_55	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_56	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_57	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_58	StartSHKHVTime_De	Wait time for the signal Safety Circuit

Tag	Parameter	Explanation
	lay	HV, in case the start condition is monitored.
Parameter_59	PassButtonVisible	Indicates whether the button Pass will be shown during a Multitest.
Parameter_60	SparkDetection	This parameter is only valid on deivices with HVdc7/8 module and a HMP supporting spark detection. Setting of the spark detection. 0 = Off 1 = Coarse 2 = Normal 3 = Fine
Parameter_61	ContinousRamp	Indicates that the rampe will be continued after the test step. This parameter is only valid for the variant for KWP protocol and high voltage tester of Series 36. 0: Ramp will not be continued 1: Ramp will be continued

6.4.3.1.3 High voltage DC

Parameters of the High voltage DC test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	U	Test voltage
Parameter_3	I_min	Lower threshold
Parameter_4	I_max	Upper threshold
Parameter_5	t	Test duration
Parameter_6	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_7	Ramp	Indicates whether the ramp is active.
Parameter_8	U_start	Start voltage
Parameter_9	t_up	Increase time of the ramp. This

Tag	Parameter	Explanation
		parameter is only valid if the ramp is active.
Parameter_10	t_down	Drop time of the ramp. This parameter is only valid if the ramp is active.
Parameter_11	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_12	U_discharge	Discharge voltage
Parameter_13	Polung	Contacting setting of an external relay matrix.
Parameter_14 bis Parameter_29	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_30	StateChangeBits	Always 0, never used.
Parameter_31	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_32	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_33	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_34	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_35	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_36	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_37	ErrorStateChangeBits	Always 0, never used.
Parameter_38	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_39	ErrorWSBTimeValid	Delay time active.
Parameter_40	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_41	Quelle	Selected current source. This parameter is only used in the event of a hot high voltage.

Tag	Parameter	Explanation
Parameter_42	f_Source	Frequency of the source. This parameter is only used in the event of a hot high voltage.
Parameter_43	U_Source	Voltage of the source. This parameter is only used in the event of a hot high voltage.
Parameter_44	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_45	Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_46	Auswertung	Type of the analysis of the test. 0 = end the test time 1 = end with start signal
Parameter_47	Repeating	Indicates how often the test step is carried out.
Parameter_48	StartButton	Indicates whether the Start button is displayed.
Parameter_49	PassButton	Indicates whether the Pass button is displayed.
Parameter_50	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_51	CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Parameter_52	Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
Parameter_53	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_54	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_55	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.

Tag	Parameter	Explanation
Parameter_56	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.
Parameter_57	PassButtonVisible	Indicates whether the button Pass will be shown during a Multitest.
Parameter_58	SparkDetection	This parameter is only valid on deivices with HVdc7/8 module and a HMP supporting spark detection. Setting of the spark detection. 0 = Off 1 = Coarse 2 = Normal 3 = Fine
Parameter_59	ContinousRamp	Indicates that the rampe will be continued after the test step. This parameter is only valid for the variant for KWP protocol and high voltage tester of Series 36. 0: Ramp will not be continued 1: Ramp will be continued

6.4.3.1.4 Insulation

Parameters of the Insulation test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	U	Test voltage
Parameter_3	R_min	Lower threshold of the insulation resistance.
Parameter_4	t	Test duration
Parameter_5	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_6	Ramp	Indicates whether the ramp is active.
Parameter_7	U_start	Start voltage
Parameter_8	t_up	Increase time of the ramp. This

Tag	Parameter	Explanation
		parameter is only valid if the ramp is active.
Parameter_9	t_down	Drop time of the ramp. This parameter is only valid if the ramp is active.
Parameter_10	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_11	U_discharge	Discharge voltage
Parameter_12	Polung	Contacting setting of an external relay matrix.
Parameter_13 bis Parameter_28	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_29	StateChangeBits	Always 0, never used.
Parameter_30	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_31	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_32	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_33	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_34	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_35	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_36	ErrorStateChangeBits	Always 0, never used.
Parameter_37	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_38	ErrorWSBTimeValid	Delay time active.
Parameter_39	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_40	Quelle	Selected current source. This parameter is only used in the event of a hot high voltage.

Tag	Parameter	Explanation
Parameter_41	f_Source	Frequency of the source. This parameter is only used in the event of a hot high voltage.
Parameter_42	U_Source	Voltage of the source. This parameter is only used in the event of a hot high voltage.
Parameter_43	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_44	Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_45	Auswertung	Type of the analysis of the test. 0 = end the test time 1 = end with start signal
Parameter_46	Repeating	Indicates how often the test step is carried out.
Parameter_47	StartButton	Indicates whether the Start button is displayed.
Parameter_48	PassButton	Indicates whether the Pass button is displayed.
Parameter_49	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_50	CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Parameter_51	Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
Parameter_52	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_53	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_54	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.

Tag	Parameter	Explanation
Parameter_55	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.
Parameter_56	PassButtonVisible	Indicates whether the button Pass will be shown during a Multitest.

6.4.3.1.5 FCT-Current

Parameters of the FCT-Current test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	U_Source	Source of the test supply.
Parameter_3	U	Voltage of the test item supply
Parameter_4	I_min	Lower threshold value during the analysis. Not valid if the analysis is set to Pass/Fail. The unit and thresholds depend on the channel.
Parameter_5	I_max	Upper threshold value during the analysis. Not valid if the analysis is set to Pass/Fail. The unit and thresholds depend on the channel.
Parameter_6	t	Test time
Parameter_7	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_8	f	Frequency of the voltage
Parameter_9	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_10	t_timeout	Timeout for the start of the analysis. The value is not used for all start scenarios.
Parameter_11	Gradient	Gradient for the start of the analysis. This value is not used for all start

Tag	Parameter	Explanation
		scenarios.
Parameter_12	Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_13	Scenario	Type of the start of the analysis
Parameter_14	Polung	Contacting setting of an external relay matrix.
Parameter_15 bis Parameter_30	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_31	Auswertung	Type of the analysis 0 = measurement 1 = Pass/Fail button
Parameter_32	StateChangeBits	Always 0, never used.
Parameter_33	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_34	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_35	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_36	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_37	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_38	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_39	ErrorStateChangeBits	Always 0, never used.
Parameter_40	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_41	ErrorWSBTimeValid	Delay time active.
Parameter_42	Kanal	Measurement channel 0 = current 1 = analogue channel1 2 = analogue channel2 3 = analogue channel3 4 = analogue channel4

Tag	Parameter	Explanation
		5 = voltage measurement
Parameter_43	SourceIsDC	External source provides direct current voltage
Parameter_44	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_45	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_46	Graphic	Type of the graphics settings 0 = no graphics 1 = only display graphic 2 = display and save graphic
Parameter_47	Repeating	Indicates how often the test step is carried out.
Parameter_48	StartButton	Indicates whether the Start button is displayed.
Parameter_49	PassButton	Indicates whether the Pass button is displayed.
Parameter_50	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_51	CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Parameter_52	Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
Parameter_53	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_54	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_55	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_56	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.6 Leakage current

Parameters of the **Leakage current** test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	Messmodell	Measurement model used.
Parameter_3	Messmethode	Measurement method used. 0: Protective conductor current 1: Housing discharge current
Parameter_4	Management	Indicates how the supply of the test item is to be carried out. 0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_5	U_Source	Source of the test supply.
Parameter_6	U	Voltage of the test item supply
Parameter_7	I_max	Upper threshold for the discharge current.
Parameter_8	t	Test time
Parameter_9	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_10	f	Frequency of the voltage
Parameter_11	t_start	Will not be used.
Parameter_12	Auswertung	Measurement channel used for the test: 0: I AC rms 1: I DC 2: I min 3: I max 4: I rms
Parameter_13	Polaritaet	Polarity used of the supply of the test item. For single-phase test item: 0: Automotive

Tag	Parameter	Explanation
		1: L1-> PE 2: L2-> PE 3: Mode B 4: Automatic with first error 5: L1 -> PE with first error 6: L2 -> PE with first error With three-phase test item: 0: Clockwise rotation 1: Counterclockwise rotation
Parameter_14	SelftestMode	Always 0.
Parameter_15	Polung	Contacting setting of an external relay matrix.
Parameter_16 bis Parameter_31	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_32	StateChangeBits	Always 0, never used.
Parameter_33	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_34	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_35	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_36	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_37	I_Min	Lower threshold for the discharge current.
Parameter_38	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_39	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_40	ErrorStateChangeBits	Always 0, never used.
Parameter_41	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_42	ErrorWSBTimeValid	Delay time active.
Parameter_43	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition

Tag	Parameter	Explanation
Parameter_44	Phase	Number of phases of the test item.
Parameter_45	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_46	Repeating	Indicates how often the test step is carried out.
Parameter_47	StartButton	Indicates whether the Start button is displayed.
Parameter_48	PassButton	Indicates whether the Pass button is displayed.
Parameter_49	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_50	CreateLog	Indicates whether a log file will be created. 0 = No log file will be created 1 = A log file be created
Parameter_51	Timeinterval	Time interval between two samples which will be written to the log file. The value is in seconds. This value will only be used in case the value in CreateLog is 1.
Parameter_52	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_53	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_54	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_55	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.7 Sight check

Parameters of the Sight check test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMas	Start conditions of the test step. The

Tag	Parameter	Explanation
	k	start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_3	StateChangeBits	Always 0, never used.
Parameter_4	Abfrage	Mode for termination.
Parameter_5	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_6	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_7	Repeating	Indicates how often the test step is carried out.
Parameter_8	StartButton	Indicates whether the Start button is displayed.
Parameter_9	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_10	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_11	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_12	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_13	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.8 Data input

Parameters of the Data Input test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.

Tag	Parameter	Explanation
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	Polung	Contacting setting of an external relay matrix.
Parameter_3 bis Parameter_17	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_18	StateChangeBits	Always 0, never used.
Parameter_19	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_20	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_21	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_22	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_23	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_24	Eingabmasken	Bit samples containing screen fields instead of requirements.
Parameter_25	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_26	Repeating	Indicates how often the test step is carried out.
Parameter_27	StartButton	Indicates whether the Start button is displayed.
Parameter_28	PassButton	Indicates whether the Pass button is displayed.
Parameter_29	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_30	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_31	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_32	StartTimeKU_Delay	Wait time for the signal Contact Monitoring, in case the start condition

Tag	Parameter	Explanation
		is monitored.
Parameter_33	StartTimeSHKHV_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.9 Batch run

Parameters of the Batch run test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	Polung	Contacting setting of an external relay matrix.
Parameter_3 bis Parameter_18	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_19	StateChangeBits	Always 0, never used.
Parameter_20	SettingFlags	Settings that indicate that certain fields are configured at other locations. This field is bit coded.
Parameter_21	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_22	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_23	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_24	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_23	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_26	Eingabmasken	Bit samples containing screen fields instead of requirements.

Tag	Parameter	Explanation
Parameter_27	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_28	Repeating	Indicates how often the test step is carried out.
Parameter_29	StartButton	Indicates whether the Start button is displayed.
Parameter_30	PassButton	Indicates whether the Pass button is displayed.
Parameter_31	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_32	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_33	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_34	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_35	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.10 User-Interface

Parameters of the User-Interface test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	In	Entry bits
Parameter_3	InMask	Mask for entry bits.
Parameter_4	Out	Output bits
Parameter_5	OutMask	Mask for output bits.
Parameter_6	Duration	Duration of the output pulse.

Tag	Parameter	Explanation
Parameter_7	Timeout	Timeout when waiting for the status of the entry bits. This parameter is only valid if the TimeoutEnable parameter is set.
Parameter_8	TimeoutEnable	States whether timeout is used. 0: Timeout is not used 1: Timeout is used
Parameter_9	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_10	Polung	Contacting setting of an external relay matrix.
Parameter_11 bis Parameter_26	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_27	StateChangeBits	Always 0, never used.
Parameter_28	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_29	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_30	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_31	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_32	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_33	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_34	ErrorStateChangeBits	Always 0, never used.
Parameter_35	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_36	ErrorWSBTimeValid	Delay time active.
Parameter_37	NumInterface	Number of the user IO interface used. 0: User-IO Interface of the internal IO-CPU 1: User-IO Interface of the external IO-CPU
Parameter_38	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition

Tag	Parameter	Explanation
		1 = Wait for switching condition
Parameter_39	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_40	Repeating	Indicates how often the test step is carried out.
Parameter_41	StartButton	Indicates whether the Start button is displayed.
Parameter_42	PassButton	Indicates whether the Pass button is displayed.
Parameter_43	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_44	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_45	StartPETme_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_46	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_47	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.11 Resistance

Parameters of the Resistance test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	t	Test time
Parameter_3	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.

Tag	Parameter	Explanation
Parameter_4	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_5	R_min	Lower threshold value of the resistance.
Parameter_6	R_max	Upper threshold value of the resistance.
Parameter_7	Polung	Contacting setting of an external relay matrix.
Parameter_8 bis Parameter_23	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_24	StateChangeBits	Always 0, never used.
Parameter_25	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_26	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_27	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_28	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_29	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_30	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_31	ErrorStateChangeBits	Always 0, never used.
Parameter_32	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_33	ErrorWSBTimeValid	Delay time active.
Parameter_34	R_offset	Resistance of the measurement structure.
Parameter_35	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_36	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_37	Repeating	Indicates how often the test step is carried out.

Tag	Parameter	Explanation
Parameter_38	StartButton	Indicates whether the Start button is displayed.
Parameter_39	PassButton	Indicates whether the Pass button is displayed.
Parameter_40	t_timeout	Maximum time after starting until the first measurement value is recorded.
Parameter_41	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_42	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_43	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_44	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_45	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.12 Continuity test

Parameter of the Continuity test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	TestVoltage	Maximum test voltage used for the measurement.
Parameter_3	TestTime	Time after that the measurement will be evaluated.
Parameter_4	MaxTestCurrent	Maximum current during the test.
Parameter_5	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_6	Limit	Limit for the evaluation.
Parameter_7	Interpretation	Evaluation of the measurement:

Tag	Parameter	Explanation
		1: Pass on continuity 2: Pass on discontinuity
Parameter_8	TypeOfSource	Type of the used source: 0: Alternating current 1: direct current
Parameter_9	Polung	Contacting setting of an external relay matrix.
Parameter_10 bis Parameter_25	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_26	StateChangeBits	Always 0, never used.
Parameter_27	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_28	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_29	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_30	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_31	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_32	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_33	ErrorStateChangeBits	Always 0, never used.
Parameter_34	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_35	ErrorWSBTimeValid	Delay time active.
Parameter_36	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_37	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_38	Repeating	Indicates how often the test step is carried out.
Parameter_39	StartButton	Indicates whether the Start button is displayed.

Tag	Parameter	Explanation
Parameter_40	PassButton	Indicates whether the Pass button is displayed.
Parameter_41	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_42	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_43	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_44	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_45	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.13 PT 100

Parameters of the PT 100 test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	t	Test time
Parameter_3	t_start	Delay time for the start scenario when starting the test until starting the analysis. This value is not valid for all start scenarios.
Parameter_4	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_5	T_min	Lower threshold for the temperature.
Parameter_6	T_max	Upper threshold for the temperature.
Parameter_7	Polung	Contacting setting of an external relay matrix.
Parameter_8 bis Parameter_23	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The

Tag	Parameter	Explanation
		display is bit coded.
Parameter_24	StateChangeBits	Always 0, never used.
Parameter_25	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_26	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_27	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_28	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_29	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_30	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_31	ErrorStateChangeBits	Always 0, never used.
Parameter_32	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_33	ErrorWSBTimeValid	Delay time active.
Parameter_34	R_offset	Resistance of the measurement structure.
Parameter_35	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_36	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_37	R0	Basic resistance of the measurement sensor.
Parameter_38	Repeating	Indicates how often the test step is carried out.
Parameter_39	StartButton	Indicates whether the Start button is displayed.
Parameter_40	PassButton	Indicates whether the Pass button is displayed.
Parameter_41	StartandJump	Indicates whether the Start and Jump buttons are displayed.

Tag	Parameter	Explanation
Parameter_42	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_43	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_44	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_45	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.14 Light control

Parameters of the Light control test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_3	StateChangeBits	Always 0, never used.
Parameter_4	Leuchte_ART	Type of the light
Parameter_5	Leuchte_Befehl	Command to the light
Parameter_6	Leuchte_DIM	Dim value
Parameter_7	Leuchte_DALIC	DALIC
Parameter_8	Leuchte_DALIV	DALIV
Parameter_9	Leuchte_DIMT	DIMT
Parameter_10	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_11	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_12	ErrorStateChangeBits	Always 0, never used.
Parameter_13	ErrorWSBDelay	Delay of switching further in the event of

Tag	Parameter	Explanation
		an error.
Parameter_14	ErrorWSBTimeValid	Delay time active.
Parameter_15	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_16	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_17	Repeating	Indicates how often the test step is carried out.
Parameter_18	StartButton	Indicates whether the Start button is displayed.
Parameter_19	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_20	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_21	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_22	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_23	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.15 Dummy load

Parameters of the Dummy load test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	Management	Indicates how the supply of the test item is to be carried out.

Tag	Parameter	Explanation
		0: Power off after test 1: Keep power on after test 2: Only power off 3: Power off only on error 4: Only power on
Parameter_3	U_Source	Source of the test supply.
Parameter_4	U	Voltage of the test item supply
Parameter_5	f	Frequency of the voltage
Parameter_6	Channels	Number of channels
Parameter_7	RGas	Gas resistance
Parameter_8	RCoil	Coil resistance
Parameter_9	Filament_enable	Active flame
Parameter_10	Filament_t	Active flame
Parameter_11	Filament_delay	Flame delay
Parameter_12	Filament_I	Current of the flame
Parameter_13	Ignition_enable	Ignition available
Parameter_14	Ignition_t	Ignition time
Parameter_15	Igniton_delay	Ignition delay
Parameter_16	Ignition_U	Ignition voltage
Parameter_17	Fct_Enable	Function available
Parameter_18	Fct_t	Duration of the function
Parameter_19	Fct_delay	Delay of the analysis
Parameter_20	Fct_Imin	Lower threshold value of the current
Parameter_21	Fct_Imax	Upper threshold value of the current
Parameter_22	t_timeout	Always 0
Parameter_23	Polung	Contacting setting of an external relay matrix.
Parameter_24 bis Parameter_39	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_40	StateChangeBits	Always 0, never used.
Parameter_41	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_42	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_43	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements

Tag	Parameter	Explanation
		1 = pass key
Parameter_44	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_45	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_46	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_47	ErrorStateChangeBits	Always 0, never used.
Parameter_48	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_49	ErrorWSBTimeValid	Delay time active.
Parameter_50	Filament_Imax	Max. current of the flame
Parameter_51	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_52	Repeating	Indicates how often the test step is carried out.
Parameter_53	StartButton	Indicates whether the Start button is displayed.
Parameter_54	PassButton	Indicates whether the Pass button is displayed.
Parameter_55	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_56	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_57	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_58	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_59	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.16 Light filament current

Parameters of the Light filament current test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The

Tag	Parameter	Explanation
		start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_2	Management	Indicates how to proceed after the test with supplying the test item. 0: Deactivate 1: Activate
Parameter_3	Filament_enable	Active flame
Parameter_4	Filament_t	Active flame
Parameter_5	Filament_delay	Flame delay
Parameter_6	Filament_I	Current of the flame
Parameter_7	Polung	Contacting setting of an external relay matrix.
Parameter_8 bis Parameter_23	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_24	StateChangeBits	Always 0, never used.
Parameter_25	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_26	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_27	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_28	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_29	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_30	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_31	ErrorStateChangeBits	Always 0, never used.
Parameter_32	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_33	ErrorWSBTimeValid	Delay time active.

Tag	Parameter	Explanation
Parameter_34	Filament_Imax	Max. current of the flame
Parameter_35	StartStateChange	Indicates whether the switching condition needs to be maintained when testing the start conditions. 0 = no waiting for switch condition 1 = Wait for switching condition
Parameter_36	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_37	Repeating	Indicates how often the test step is carried out.
Parameter_38	StartButton	Indicates whether the Start button is displayed.
Parameter_39	PassButton	Indicates whether the Pass button is displayed.
Parameter_40	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_41	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.
Parameter_42	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_43	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_44	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.3.1.17 External program

Parameters of the External program test step.

Tag	Parameter	Explanation
Parameter_0	StartCondition	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartConditionMask field.
Parameter_1	StartConditionMask	Start conditions of the test step. The start conditions are saved in a bit-coded manner and can only be analysed together with the StartCondition field.
Parameter_3	Polung	Contacting setting of an external relay

Tag	Parameter	Explanation
		matrix.
Parameter_4 bis Parameter_19	PolungCAN_00 bis PolungCan_15	Setting of the relay matrix in accordance with the choice in the program. The display is bit coded.
Parameter_20	StateChangeBits	Always 0, never used.
Parameter_21	Multitest_Enable	Multitest is active, if the value does not equal 0.
Parameter_22	Multitest_Auswertung	Method of analysing the multitest. 0 = worst measurement value.
Parameter_23	Multitest_Endekriterium	Method of ending the multitest. 0 = number of measurements 1 = pass key
Parameter_24	Multitest_Endekriterium_Anzahl	Number of multitest inspections.
Parameter_25	SettingsFlags	Settings
Parameter_26	t_delay	Start delay between fulfilling the start condition and the start of the test.
Parameter_27	ErrorStartCondition	Condition for switching forward in the event of an error.
Parameter_28	ErrorStartConditionMask	Mask for the condition for switching further in the event of an error.
Parameter_29	ErrorStateChangeBits	Always 0, never used.
Parameter_30	ErrorWSBDelay	Delay of switching further in the event of an error.
Parameter_31	ErrorWSBTimeValid	Delay time active.
Parameter_32	StartStateJump	Indicates whether the Jump button is displayed.
Parameter_33	Repeating	Indicates how often the test step is carried out.
Parameter_34	StartButton	Indicates whether the Start button is displayed.
Parameter_35	PassButton	Indicates whether the Pass button is displayed.
Parameter_36	StartandJump	Indicates whether the Start and Jump buttons are displayed.
Parameter_37	StartTime_Delay	Wait time for the signal Start-Button, in case the start condition is monitored.

Tag	Parameter	Explanation
Parameter_38	StartPETime_Delay	Wait time for the signal PE-Testprobe, in case the start condition is monitored.
Parameter_39	StartKUTime_Delay	Wait time for the signal Contact Monitoring, in case the start condition is monitored.
Parameter_40	StartSHKHVTime_Delay	Wait time for the signal Safety Circuit HV, in case the start condition is monitored.

6.4.4 Result

The data in this block can be found under <ResultData>/<Result>.

Tag	Explanation
Count_Tests	Number of tests that were carried out since starting the test plan.
Count_IO	Number of IO results of the test since starting the test plan.
Count_NIO	Number of NIO results of the test since starting the test plan.
Count_ERROR	Number of errors of the test since starting the test plan.
PlanCycleTime	Duration for carrying out the test. The value is always 0.
PlanStandbyTime	Duration between the end of the prior test and the start of the current test.
Result	Total result of the plan. Passed -> The test item has passed the test. Failed -> the test item has not passed the test or the test was cancelled.
Type	Type of the test item, is only filled in if the combibox is active.
UsedID	ID used to select the test plan, is only filled in when the ID-Pattern field is active.
SerialNumber	Serial number of the test item, is only filled in if the Serial-Pattern field is active.
Article	Article name, is only filled in if the Article-Pattern field is active.

6.4.5 PlanOptionen

The data in this block can be found under **<ResultData>/<PlanOptionen>**.

This block contains the subblock for the ReportOptionen and subsequent entries.

Tag	Explanation
Start_Timeout	If the vlaue is not 0 it will be checked that all other start conditions are meet after the start condition start signal is set.

6.4.5.1 ReportOptionen

The data in this block can be found under **<ResultData>/<PlanOptionen>/<ReportOptionen>**.

This block contains a list of the individual report options. Every report option is a block of its own.

6.4.5.1.1 ReportOption

The data in this block can be found under **<ResultData>/<PlanOptionen>/<ReportOptionen>/<ReportOption>**.

This block contains the subblock for the output data and subsequent entries.

Tag	Explanation
PrintFlags	Indicates for what overall result the report is to be created. The indication is bit-coded.

6.4.5.1.1.1 SpoolData

The data in this block can be found under **<ResultData>/<PlanOptionen>/<ReportOptionen>/<ReportOption>/<SpoolData>**.

Tag	Explanation
Template	File name of the template. If the file can be reached via a relative path from the folder of the plan files, the relative path is entered, otherwise the absolute path is entered.
Output	Indication where the report is to be sent. This indication is only filled in if the report is to be issued on a printer.
ConversionType	Indicates what report is to be created. **printer** -> printout on a printer using an HTML template **html** -> creation of an HTML file using an HTML template

Tag	Explanation
	pdf -> creation of a PDF file using an HTML template **xml** -> creation of an XML file **csv** -> creation of a CSV file using a CSV template **zebra** -> printout on a zebra printer using a ZPL template

6.4.6 Validation

The data in this block can be found under **<ResultData>/<Validation>**.

Tag	Explanation
Checksum	Not used, always 42.

6.5 Plan files

The plan files have the extension **.plan**. The place of saving and the file name result from the details in **Settings** -> **File storage** -> **Test plan**. This file has the format of an XML file with UTF-8 coding with BOM.

The plan files are largely identical to the result files. They differ by the encompassing **PlanData** tag instead of **ResultData**. Furthermore, the result fields in the individual test steps and the **Result** block do not apply.

6.6 Printserver configuration

This file has the name **PrintServer.conf** and resides in the working folder. This file must not be present and will not be created automatically.

In this file are settings which are used only by the printserver. These settings are for the storage of the report files, handling missing keywords and timeouts. It is possible to configure an alternative folder for each report type.

The file is in XML-format and the main tag is **Settings**.

Tag	Explanation
HTML	Alternative folder for the report type **html**.
PDF	Alternative folder for the report type **pdf**.
XML	Alternative folder for the report type **xml**.
CSV	Alternative folder for the report type **csv**.
Debug	**false**: Will a keyword not be recognized no text be generated. **true**: Will a keyword not be recognized the keyword in parantheseis will be generated. Default setting is **false**.

Tag	Explanation
PdfTimeout	Time within the PDF-document must be generated. The value is in milliseconds. Default is 6 seconds.
PrintTimeout	time within the printing on the printer must be completed. The value is in milliseconds. Default is 10 seconds.

6.7 Matrix

6.7.1 RelaisMatrix.cfg

This file will be used for all relais matrix types und describes which relais will be switched for the different outputs and wires. For the types 3 and 4 also the file for the additional relais is neccessary.

```
Description: Relais Matrix, 8Channel, 1xRelais_Platine, 1xLT_CPU
MatrixTyp: 1
MatrixNum: 1
Channels: 2
-----------------------------
Channel 1
A: 1, 2,
B: 1,
0:
-----------------------------
Channel 2
A: 3, 4,
B: 3,
0:
-----------------------------
```

Tag	Description
Description	Comment which will not be proccessed.
MatrixTyp	Determines the different modules. **1**: Matrix with max. 24 relais for each board **2**: Matrix with max. 8 relais for each board **3**: Matrix with max. 16 relais for each board **4**: Matrix with max. 32 relais for each board
MatrixNum	Number of boards in the matrix.
Channels	Number of channels in the matrix.

Between the header and the first channel resp. between the channels is a separator line. After the last channel the seperator line must be present.

Each channel consists of 4 Lines. There must be configured as much lines as set in **Channels**.

Tag	Description
	Comment which will not be proccessed.
`A:`	These relais will be switched in the case wire HV1 will connected to the apropiate output.
`B:`	These relais will be switched in the case wire HV2 will connected to the apropiate output.
`0:`	These relais will be switched in the case none of the wires will be connected to an output.

6.7.2 ExtendedRelais.conf

This file is neccessary when a matrix of type **`MatrixTyp`** 3 or 4 will be used.

This file is in XML-Format. For each test type as much lines must be present as boards are used according to the value **`MatrixNum`** in the file RelaisMatrix.cfg. The values in the tag **`unsignedInt`** have a range from 0 ... 3.

Value	Description
`0`	No additional relais switched.
`1`	Additional relais K1 switched.
`2`	Additional relais K2 switched.
`3`	Both additional relais switched.

```
<?xml version="1.0" encoding="utf-8"?>
<ExtendedRelais xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="ht
<!-- Für jede Prüfart müssen so viele Zeilen vorhanden sein, wie Platinen verbaut s
     0 = Kein Relais geschaltet, 1 = K1 geschaltet, 2 = K2 geschaltet, 3 = beide ge
  <HV_AC>
    <unsignedInt>0</unsignedInt>
  </HV_AC>
  <HV_DC>
    <unsignedInt>0</unsignedInt>
  </HV_DC>
  <ISO>
    <unsignedInt>0</unsignedInt>
  </ISO>
  <PE>
    <unsignedInt>0</unsignedInt>
  </PE>
  <FCT_Current>
    <unsignedInt>0</unsignedInt>
  </FCT_Current>
  <Resistance>
    <unsignedInt>0</unsignedInt>
  </Resistance>
  <LeakageCurrent>
    <unsignedInt>0</unsignedInt>
  </LeakageCurrent>
  <DummyLoad>
    <unsignedInt>0</unsignedInt>
  </DummyLoad>
  <FCT_Extern>
    <unsignedInt>0</unsignedInt>
  </FCT_Extern>
  <Notlicht>
    <unsignedInt>0</unsignedInt>
  </Notlicht>
  <PT100>
    <unsignedInt>0</unsignedInt>
  </PT100>
  <Matrix>
    <unsignedInt>0</unsignedInt>
  </Matrix>
</ExtendedRelais>
```

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