Manual

PRO-TEST

Test Automation

Software Manual

A46

Test Automate

Software Manual

Testautomat im Kofferformat

Handliches, portables Testsystem für
Gasentladungsableiter und
Schutzmodule
in Magazinen

list of contents

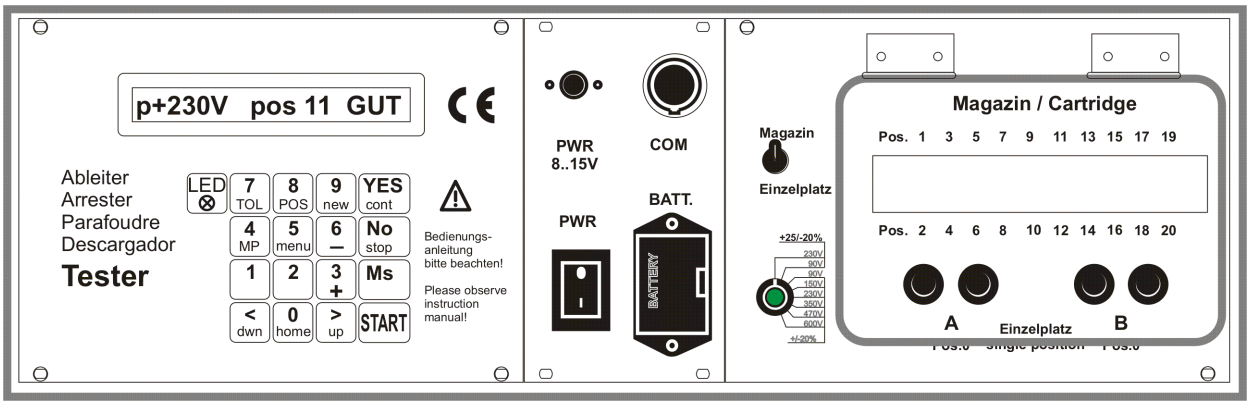
1. SETUP Setup software and install, Informationen of System

1.1 COM connect tester to PC

How to connect tester and PC:

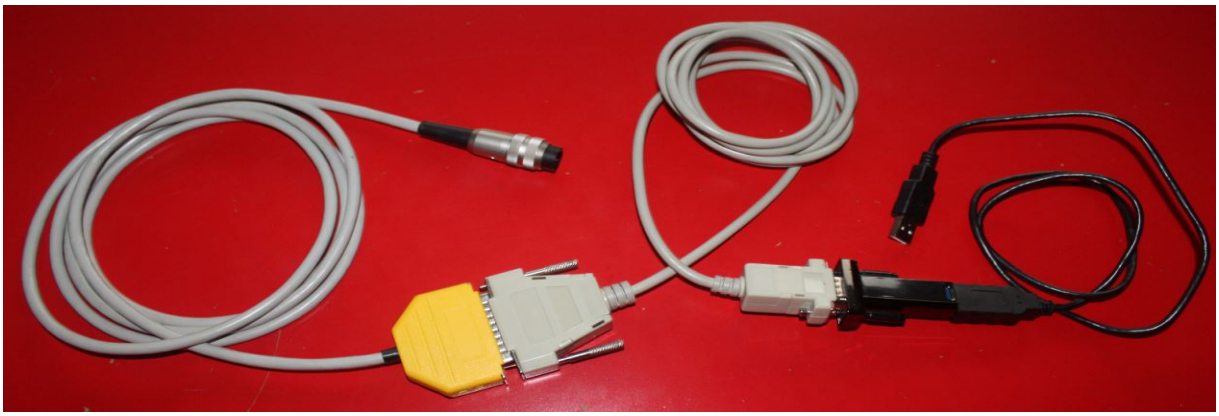
As part of the program package we deliver a COM-cable, which connects the tester to the serial COM-interface of the PC. The round plug is to be plugged , into the tester depending on the model on the front panel (A4603) or on the upper side (A4602). The 25- pin connector may be inserted directly into the COM- connector of the PC. For 9-pin connections there is an adapter cable added.
The 25-pin connector contains optical couplers, which guarantee sufficient isolation to prevent disturbances by high voltage impulse, which can be generated by the test equipment.

Please plug in COM-cable here.



USB-Connector:
We have added an USB to serial converter to the COM-cable.
You find the drivers delivered with the converter on the stick in directory **\USB2serial** and the latest driver from the manufacturer of the chipset in \FTDI-USB232 driver\ together with some installation guides

After installing the driver take a look at the Device Manager of Windows, click on Ports (COM & LPT) and notify the number of USB Serial Port e.g. (COM3).
Any number from 1 to 9 will do.
You will need this number to connect the software to the test device.



1.2 Software install, start und setup

PC Hardware :

Personal Computer (PC) with operating Windows XP oder 7, a serial interface COM1..7 or an USB-port to connect test systems and a single sheet printer for DIN A4 pages to generate reports.

Installing Software and start:

You got PRO-TEST program system as live version on an USB-stick.
Which means no installation necessary.
The program can be started immediately on the stick:
\PRO-TEST\A46\A46.exe

using Windows-Explorer (not internet explorer) select and start
(double click)

If the software is intended to run always on the same PC, building a connection may be useful.
At old versions of Windows please consider to define as working directory the directory which contains the program (A46.exe).

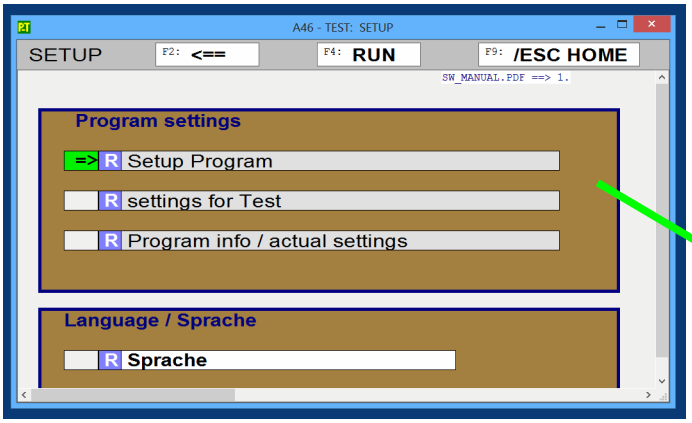
At interconnected systems it's possible to
- install the software on a network drive,
- direct data files to a network file or
- export data files to a network file.

AT start of the program main window appears showing main menu

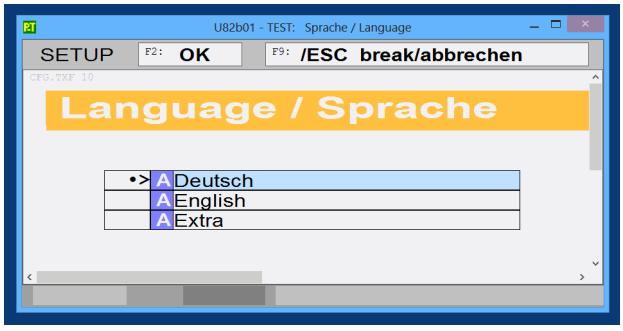
Setup and Configuration:

In main menu open **SETUP**

then choose **Setup Program'** .

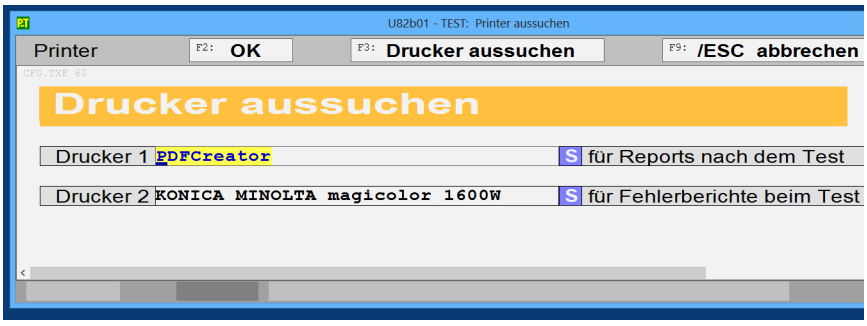


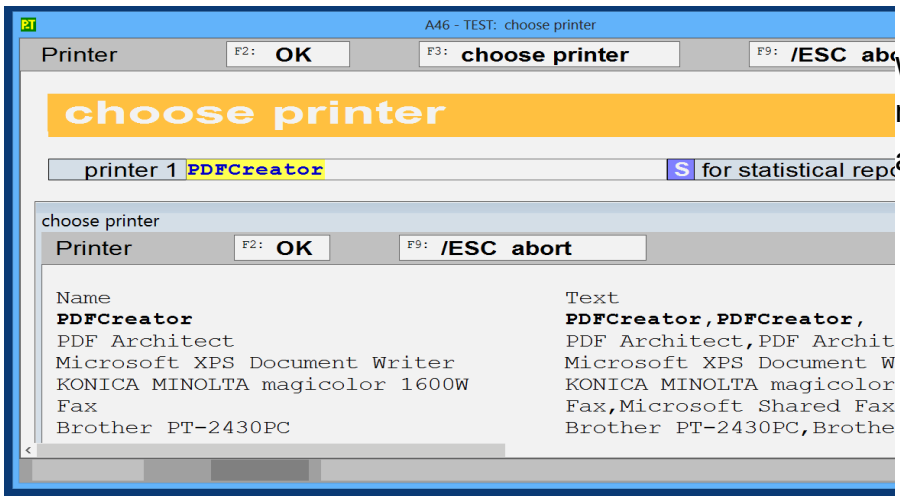
First define **language** and confirm with F2: OK



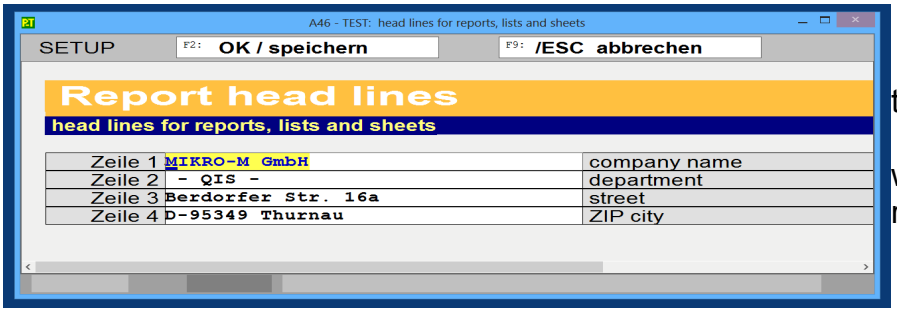
PRINTER:
Printer 1: Name of printer you want to use for reports. Main Printer.

Printer 2: for Failure- and Repair reports.
If You want to use another printer during test.



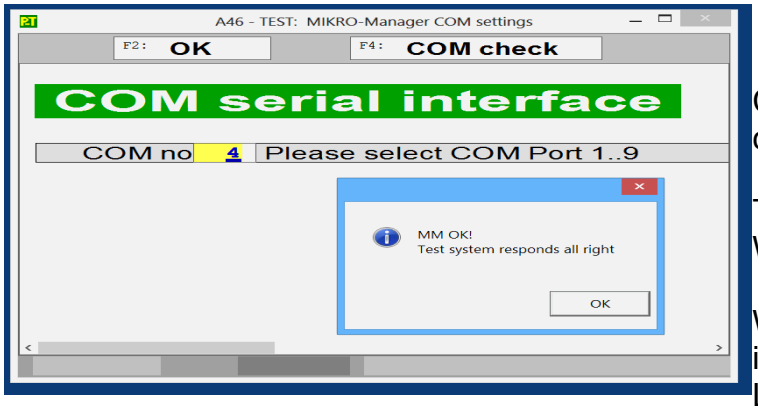


With F3: choose printer or with a mouse click on S - you can select a printer from a list of actual printers.



Head lines for reports, lists and tables

Please enter here the text lines which shall appear as header of all reports.

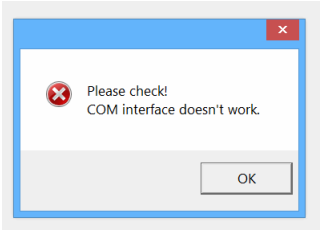


COM setup

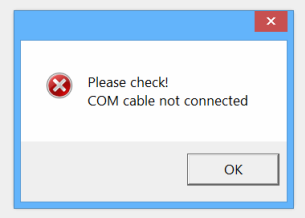
COM-nr: serial interface [1..9], which is connected to the test system.

The Nbr you can find in device manager of Windows.

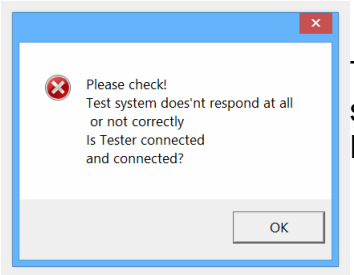
With F4: check COM - you can check how the interface works.
Leave and confirm with F2: OK



Definitely no interface available under COM no.
Interface may be occupied by another program.
At USB interface it's possible to plug off the USB-converter for a short time and plug it in again.



A working interface is found but no COM-cable. May be the COM-cable is connected to another interface.



There is a COM-cable (or similar) connected to the interface but test system doesn't answer correctly.
Please connect Tester and swicht it on.

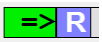
2. HANDLING general operations

AT start of the program main window appears showing main menu with a choice of different tasks you might want to start by moving the cursor into the action field (R) and click on left mouse button.
Then a checklist appears

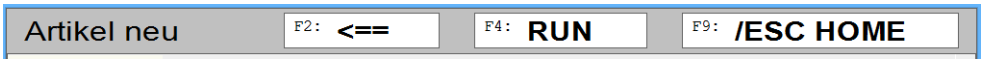
2.1 CHECKLIST work using checklists

Checklists integrate several working steps and usually are treated top down.
Some checklists offer different opportunities for one step, usually arranged side by side.

The different boxes contain display field,
action field and
text field.

The selected box ist tagged by a green arrow 

You may alter selection using cursor keys, Return or
by clicking with the mouse into display field.
Click on R or into text field starts execution.



[F4: RUN] starts execution of selected box.
[F2: <==] return to calling checklist or mask
[F9: HOME] returns to main menu
[Esc]: with Esc-key you can always leave any checklist or mask, even under malfunction.

Calling Checklist
out of another checklist or an input mask

In a box of a checkliste or an input mask, it's possible to call another checklist using R .

So You may interrupt the actual task, to fulfil some requirements and then return to the origin.

2.2 **MASK** Input using masks

- settings
- sheets
- values with dimension

Screen shows a mask consisting of fixed terms (gray) and editable working areas, in which you can enter necessary inputs.
Already existing inputs are shown in working areas.
.

Position of input (Cursor) is to be moved by cursor keys:
- [right] : next character
- [left] : previous character
- [down],[TAB] : next field
- [up] : previous field

and with the following Special keys :
- [ENTER] : next field
- [Home] : first character of field
- [End] : last character of field
- [Del] : delete character
- [<--] : delete character to the left
- [Ins] : switch to another insert mode

With key [Esc: abort] you can finish input at any time. All changes made are taken over but possibly not saved.

action buttons
In some boxes there are action buttons on the right of the input field, which can be activated by clicking with mouse buttons.
General meaning of the buttons:

S = Select out of a list

D = view and edit Details

•> A = Action, activate field (radio button)

R = RUN, start action as described nearby

[Fn] : execute function key Fn: ... (see menue) .

A special feature of the PRO-TEST System is the handling of values with physical unit - e.g.:

measured Voltage Um = | 100 | Volt

With function key [F11] you can print the actual mask .

2.3 PRINT Reports and Listings

Display as printed in client area of main window. .
Printing may be started with [F2: print]. First a dialogue box asking for the pages to print and offers a choice of [F2: OK] start printing or [F9: abort]. .

2.4 choose file

Existing files shown in a list to choose by cursor or mouse.
Select item using [F2: OK] and start desired action (e.g. read, write ..) or abort with [F9: END].

In save mode it is possible to enter a new name in working fied (top middle)
and select with [F2: OK].

2.5 set file counter

Module to set file counter and edit prefix which define format of file name created as proposal.

System proposes for each new test data file a unique name, which can be taken or edited.

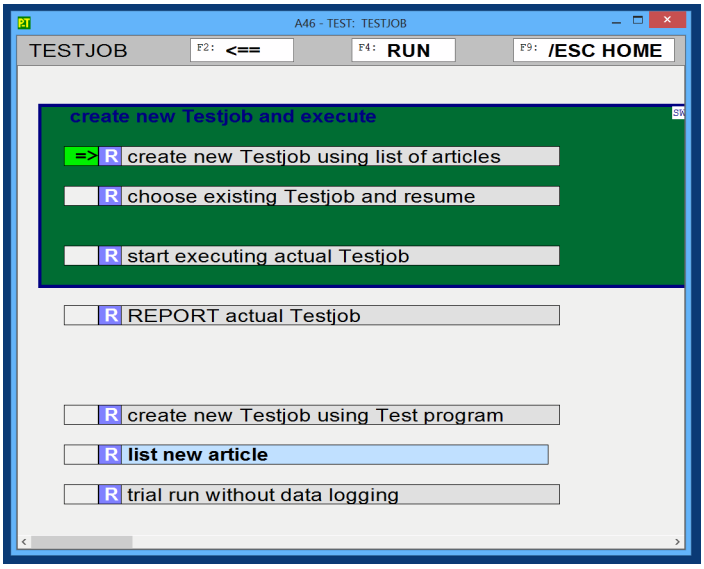
File name consists of
prefix = fixed part e.g. A46-
counter = consecutive number starting at defined state

prefix may define format of numbers e.g: A46-#### defines 4 characters for number filled with zeros if necessary. If counter exceeds 9999 prefix will be overwritten partially.

3. TESTJOB execute test

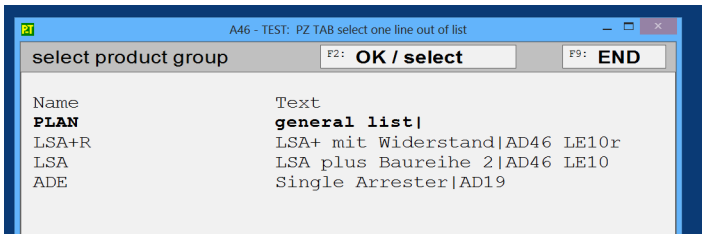
A Testjob is an order to execute a test according to a defined test program.
Depending on actual conditions you may start a testjob in different ways.
If you have to prepare conditions you may do this using

5.1 list new article



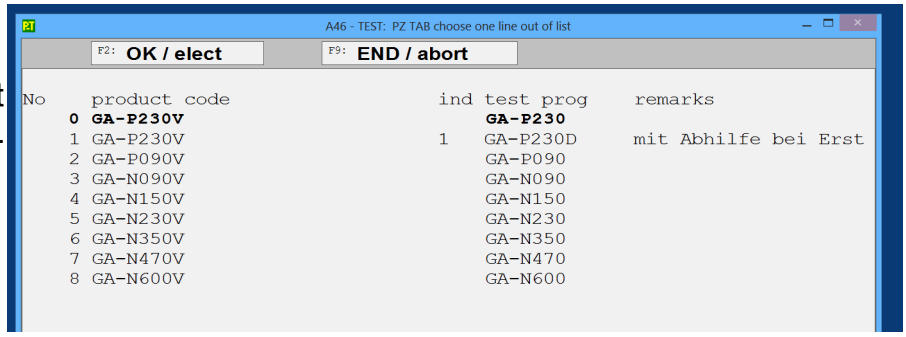
3.1 Testjob, create new using list of articles

If a suitable Testprogramm exists and the product to be tested is listed in the list of articles, it's possible to choose the article and create a new test job and start the test.



There are different lists of articles containing different groups of products. Therefore first a product group is to be chosen.

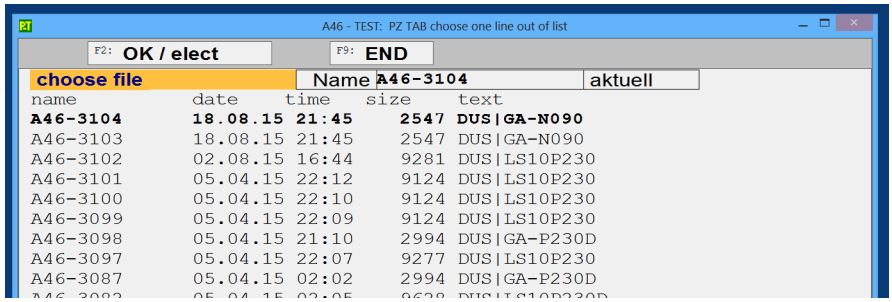
After that the articles of the product group are displayed to Your choice.
As soon as the article has been chosen and confirmed ...



continue at **Test running**

3.2 Testjob choose new and resume

If You want to resume a test job already existing, it's possible to choose the regarding data file and start the test job at once .
The name of the data file is given in all reports and as name of exported file.

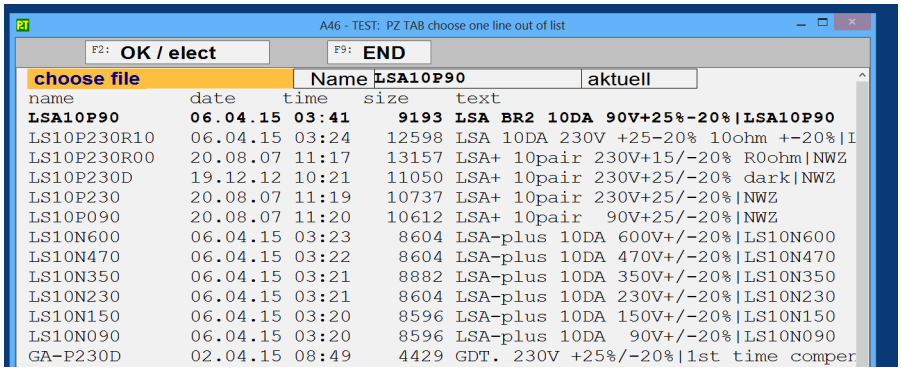


continue at **Test running**

3.3 Testjob create new using Test programm

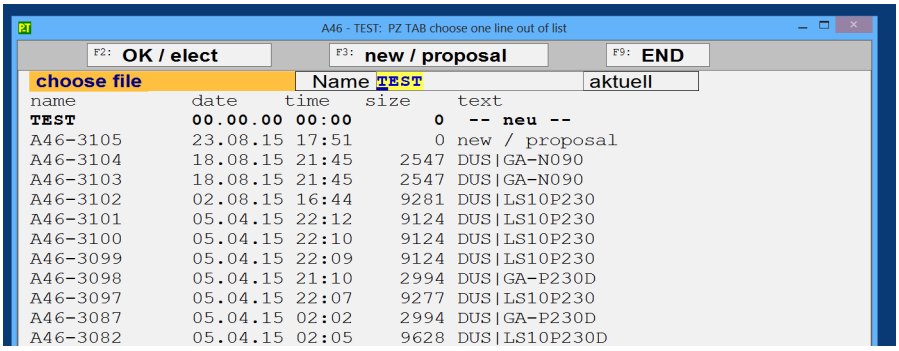
If there exist a suitable Testprogramm, it may be used to create a new Testjob.

The test programs available are on offer.



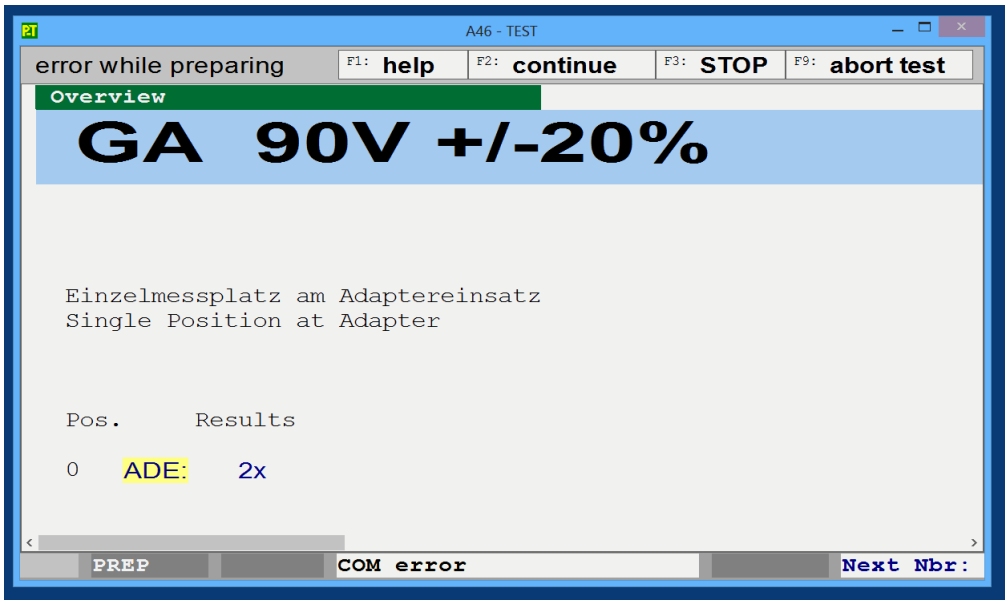
after that the system proposes the next free name for the data file, which is only to be confirmed. Her is the opportunity to define another name e.g. for special reason.

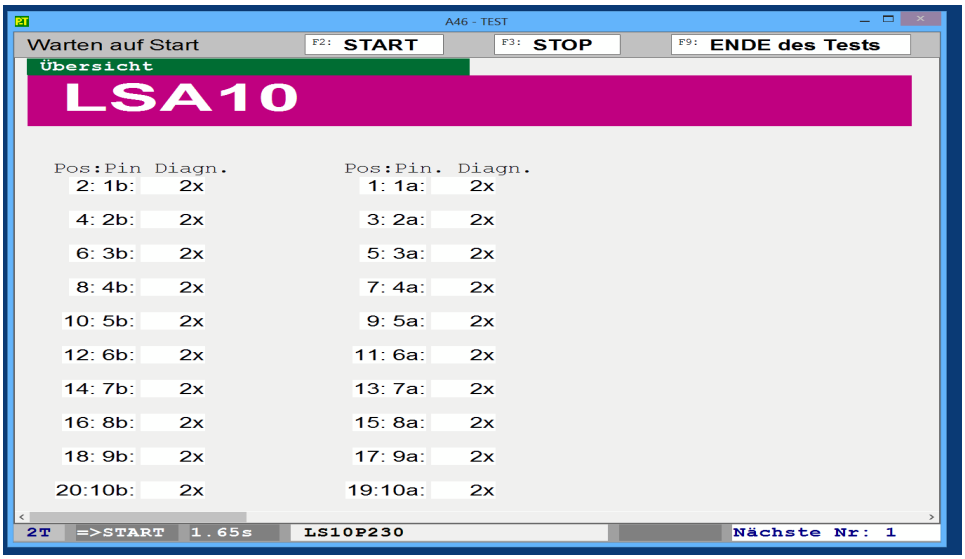
continue at **Test running**



3.4 Test running

Overview shows test positions and number of measurements in each position.

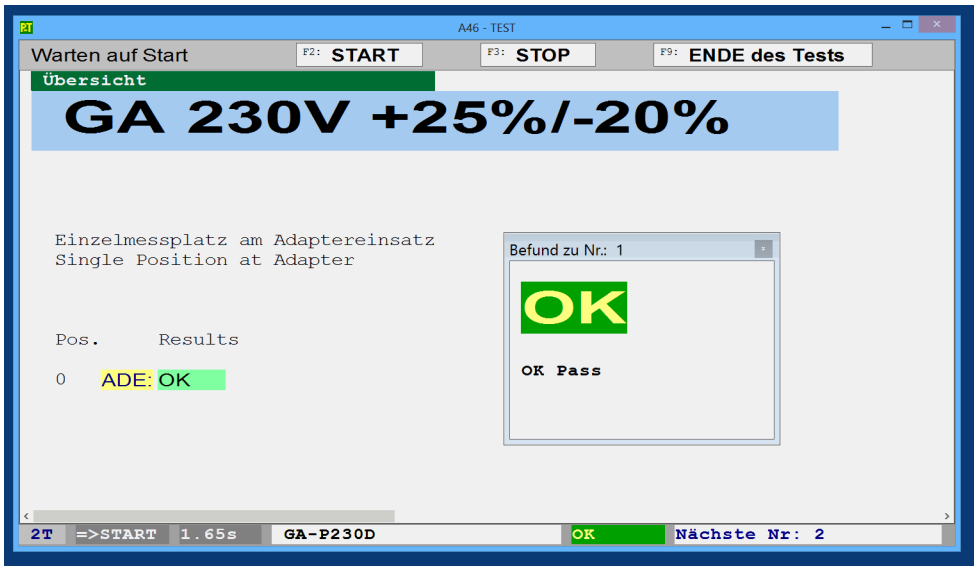




3.5 Display during test

Available test results are shown in different representations which you may choose using **page up / page down** keys:

overview



Large Headline and summarily display of results in test positions labelled.

Table of measures values

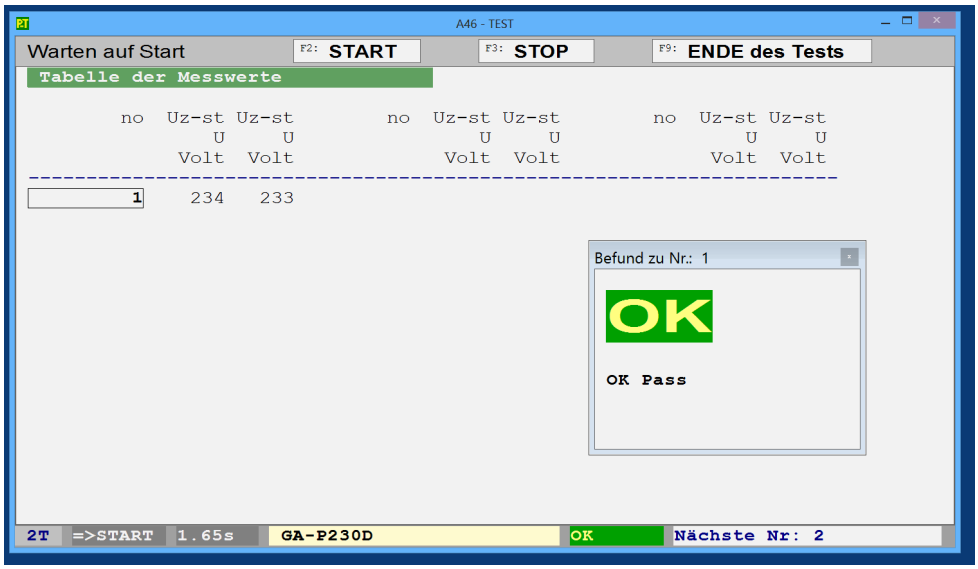
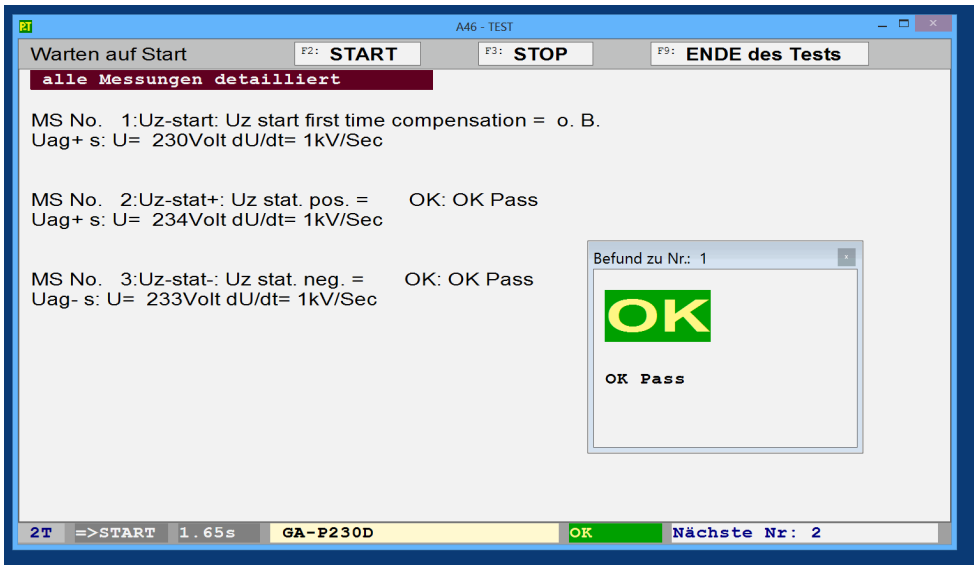


Table of measured values and faulty values tagged.

all measurements en detail

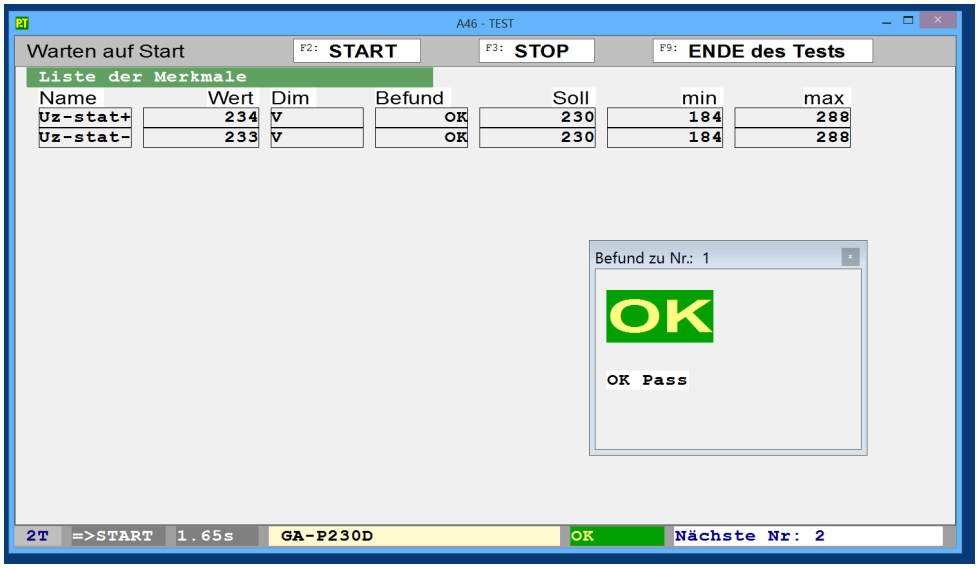


Detailed list of measured values, results and position of all measurements

faulty measurements en detail

as obove but only faulty measurements .

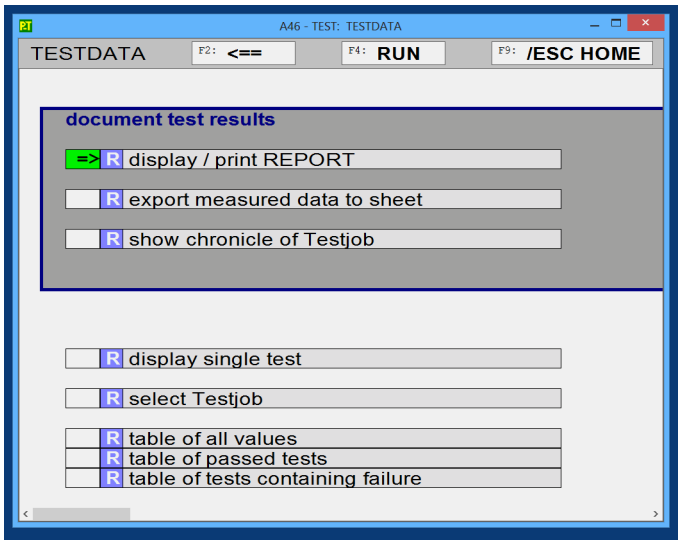
Liste of criteria



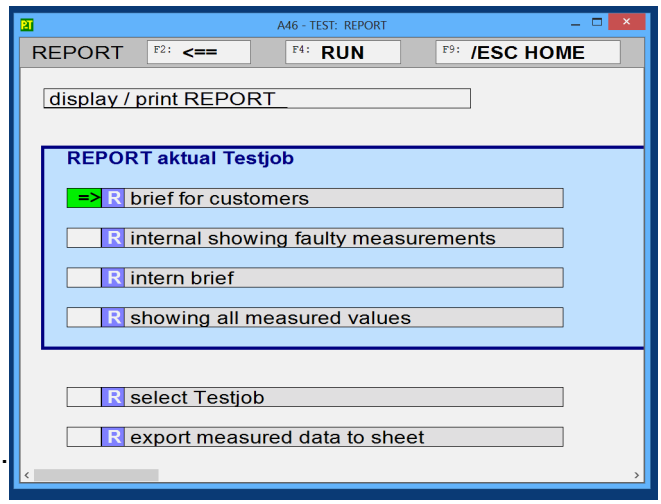
List of measured value, which are provided with tolerances
including actal findings, nominal value and Limits

4. TESTDATA statistical evaluation

The whole lot of tested items will be presented.
The actual testjob is the one used for test at last.
Beneath you may select another testjob:
select Testjob



4.1 REPORTS print results



TEST REPORT

A variety of different types of report

Just select a testjob and take a look at the different reports available.

Typical Elements of a report are:

defect analysis : number of findings in relation to number of items

statistical numbers : mean average, standard deviation, Min- and Max values.

Histogramme : frequency distribution in 10 classes of same width and 2 extra classes (above and beneath) as bar chart

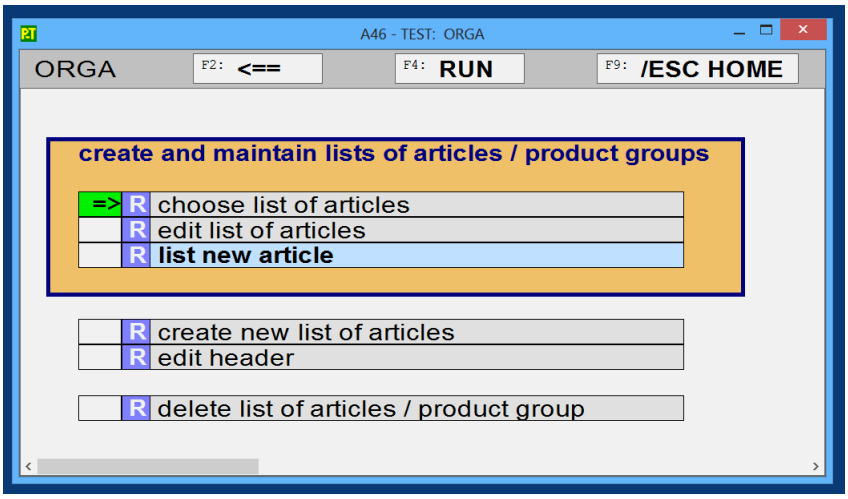
table : each single value measured is displayed in a table.
Faulty values are emphasized.

4.2 EXPORT all measured values to a spread sheet

export measured data to sheet

First the data files available are on offer. The actual one ist emphasized.
With **OK** the transfer is started.
In directory \EXPORT\ the exported file will be saved under <name>.CSV .
The exported file contains all measured values an can be read by a spread sheet program:
Settings separator = **; Semicolon** and extended identification of numbers.
As well we give the recommendation to try out. Choose a data file and take a look at the data table.

5. TESTORGA TestProgs in lists of articles



List of articles
List of articles leading to appropriate TestProgs

The list of articles makes it easy to find appropriate TestProgs via the article You want to test.
All You need is the number or the name of the article to find the appropriate TestProg.

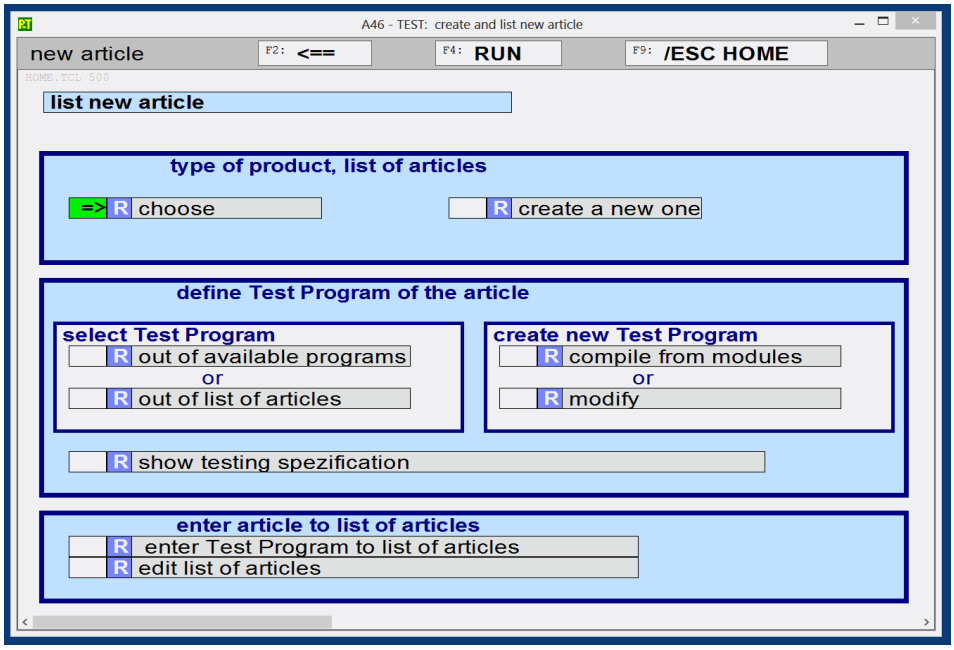
---

choose list of articles
Sometimes it's convenient to work with several lists for different purposes or occasions.
In most cases one list is sufficient. Here You can choose the list You want to edit.

edit list of articles
This option is meant to edit existing lines.
Under product code fill in number or name of the product You want to test.
Under Ind You may fill in an additional letter or digit to distinguish different levels of test.
Under test program define the appropriate TestProg.

create new list of articles
This option is meant to create a new empty list.

5.1 list new article



Checklist:
list new article

List a new article in 3 steps:

1. list of articles
   choose
   or create a new one
2. define TestProg
3. enter article
   to list of articles

---

define Test program

For each article to be tested a TestProg has to be defined which contains the tests necessary and specifies the appropriate settings. One TestProg may be used for several articles.

select Test program

If there exists an appropriate TestProg, You can choose it here and carry it into the list of articles. Please consider that all changes You make to the TestProg, will affect all other articles using this TestProg. If You want to make changes only to the actual article, first create a copy of the TestProg. See modify TestProg.

out of list of articles

If there exists already an article which is tested the same way as the actual one, here You may choose this article and take over its TestProg

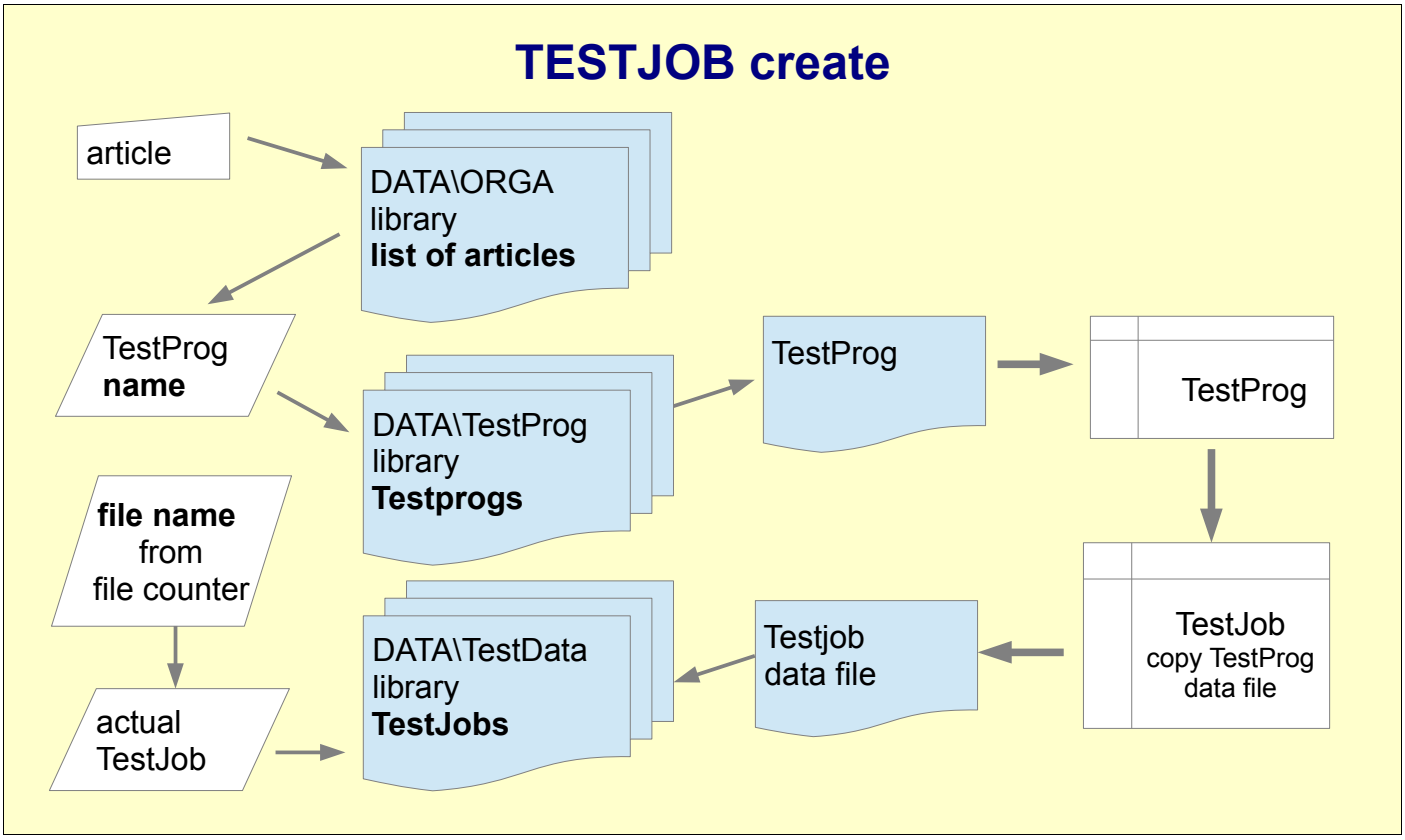
enter Test program to list of articles

On top of the list a new line will be inserted and the name of the actual TestProg.
Under product code fill in the number of the article to be tested. As default the number out of testjob
The index [I] is set to [0] . If You plan several different tests for the same product code, You can here make sure a distinction by using a digit or a letter e.g. **F** for final test / **R** for reexamination / **P** for preliminary test.
Under remarks you may give some hints for the user.

5.2 manage TESTJOBs

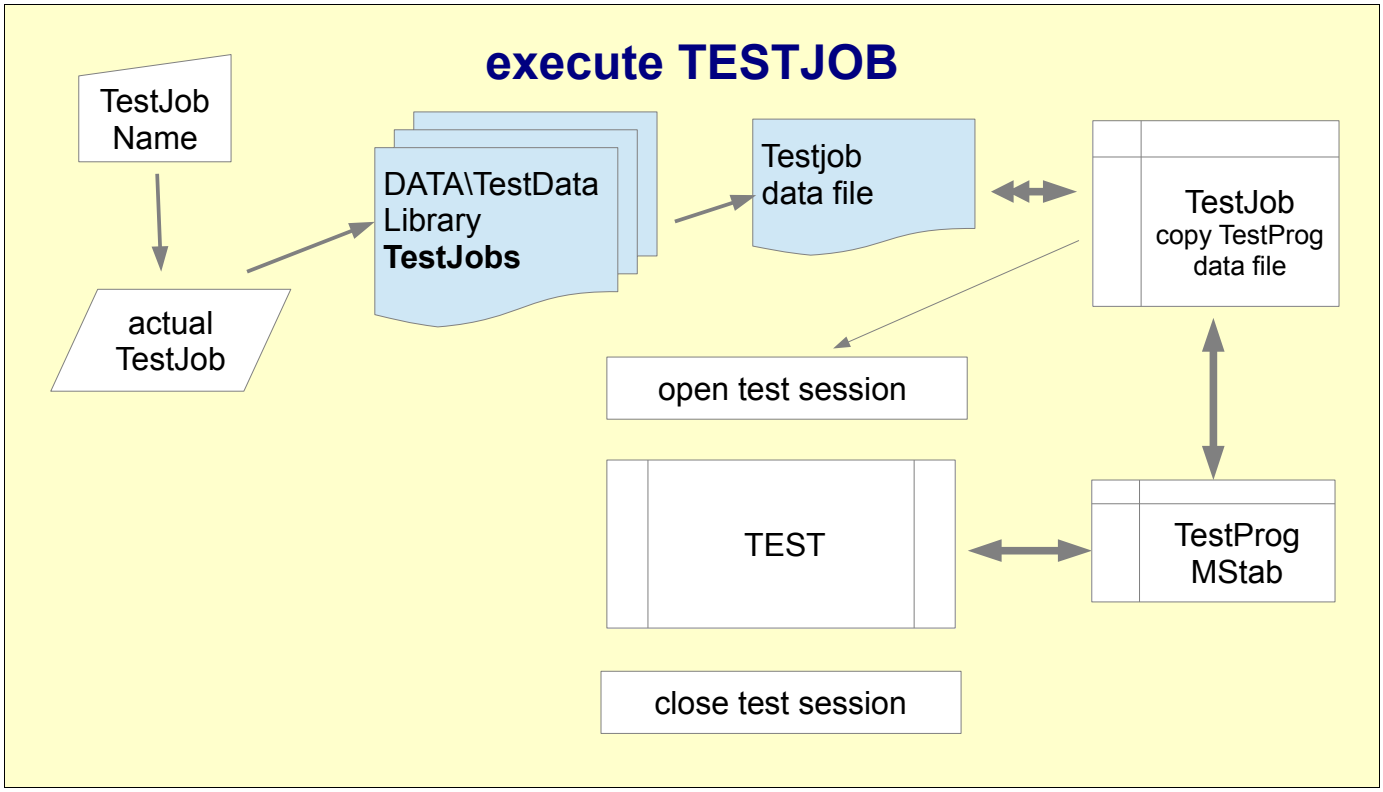
To define a Testjob you need the **name** of the Testprog and a **file name** which is the name of the Testjob and of the data file recording the results.

The lists of articles help to find the **name** of the appropriate TestProg.
The **file name** is automatically generated by the file counter.



Testjob will be created as data file in directory DATA\TestData .
More precise as 2 files
<name>.DUS contains a copy of TestProg and actual settings,
TestJob data and statistical data. nimmt statistische Daten auf.
<name>.DUR records measured values.

To execute the test, the TestJob data file is sufficient, the original TestProg is no longer needed.
Changes made to the TestProg after creation of a TestJob do not affect running testjobs.
Changes made to the TestProg affect only testjobs created new.

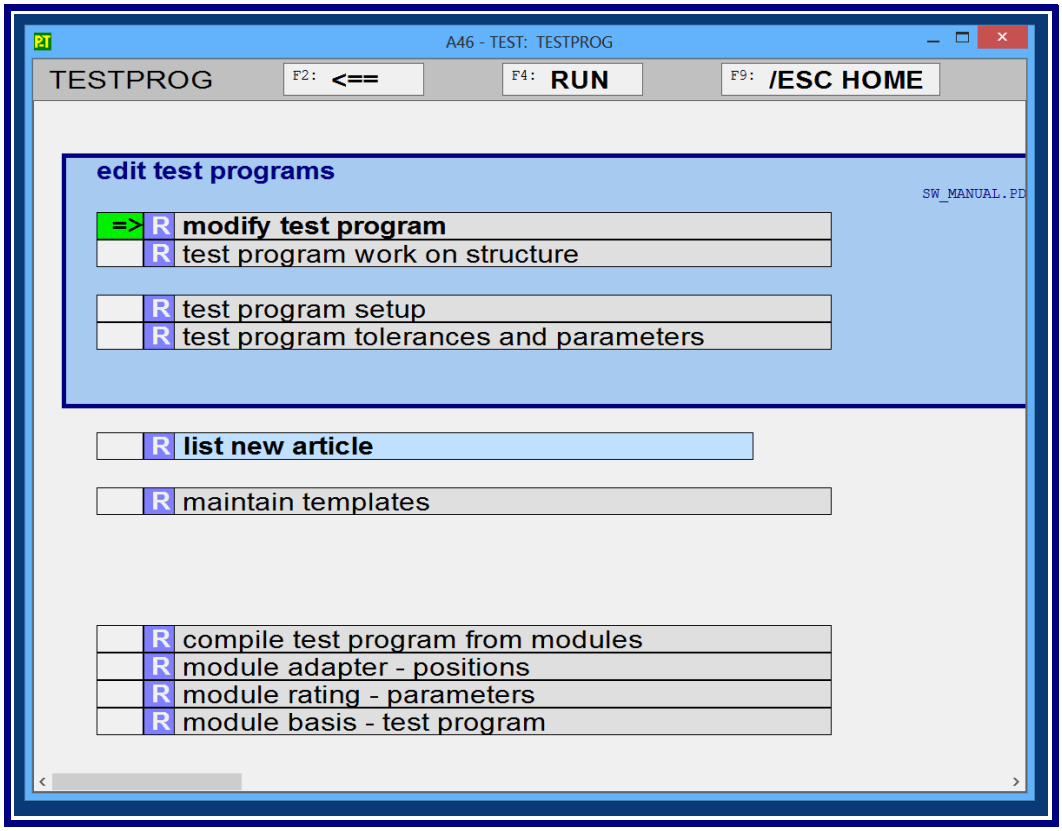


Testprog	Test specification, may be valid for several testjobs .
Testjob, batch	defined by data filei, file name
Testsession,	start and execute Testjob – repeatedly possible at different times.
Test run,	Test sequence (MStab) once executed completely.
Measurement	One Step of a test sequence
Measured value	One value of a measurement.

The results are continuously recorded in the table of measured values (Mstab) but will be transferred to the data file only when the test sequence is finished.

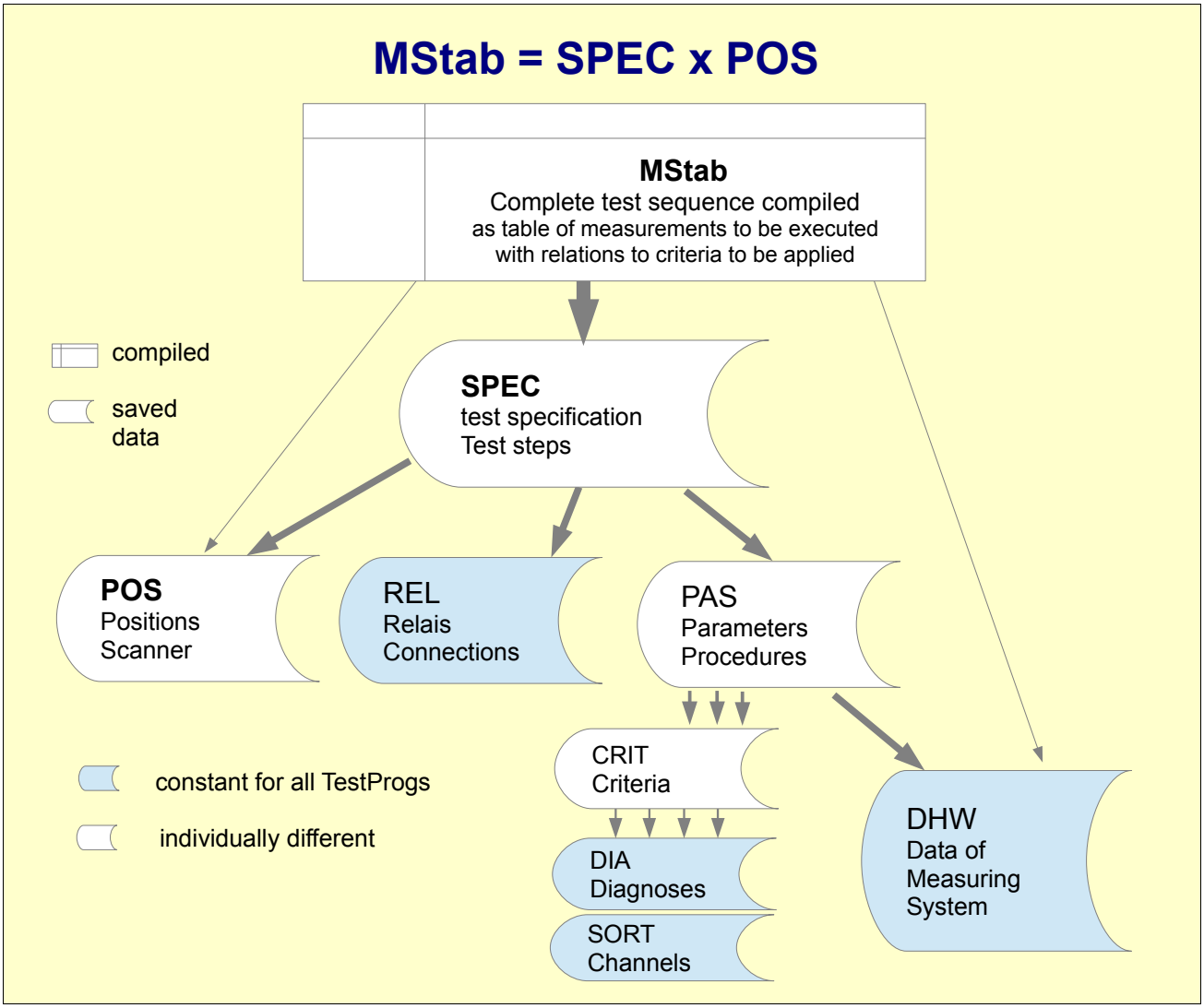
6. TESTPROG, create and edit test programs

edit
test programs
and create new ones
- with and without
Test system



6.1 TestProg structure

The user specifies the test sequence in several lists and the system compiles thereout the complete test sequence **MStab**,



which will be executed step by step during test.

In the list **SPEC**: specification different components will be assembled.
The list will be evaluated from beginning to the end step by step and determines which position is to be selected and which measurement has to proceed in this position.
Thereby positions may be aggregated in groups and measurements in sequences.
So it is possible to create extensive test sequences by only a few commands.

The list **POS**: Positions determines which terminals (e.g. of a magazine) are to connect and how the results are shown in the overview.
Themes: Circuit, Adapter

The list **REL**: Relais is inactive at A46

The list **PAS**: Sets of Parameters determines the measuring methods, settings and which measured values are to be evaluated by which criterion.
Themes: Components, test methods, settings, tolerances.

DHW: Data of Hardware describes the test system used and is delivered together with the test system completely predefined.

Checklist : how to build up aTestProg:

A Select a template and take over
Always use a template because
1. some inputs are the same for all tests
2. a number of predefined structures can be adapted to the actual task by minor changes.
3. the system is designed to easy changing everything, try out and adapt.

The choice which template to take as basis is often secondary.

B Testjob data
1. define a file name for the TestProg.
2. description
3. Big Text Header
4. general settings

C **POS** define Positions
Which Terminals, Circuit, Adapter etc.
1. Scanner combinations, position of the Scanner
   a. Circuit of test object, which terminals are to be connected.
   b. Choose adapter. Which terminals for which measurement...
   c. Are there existing lists of positions regarding the circuit or adapter?
   d. Allocate a line in the list of positions for each combination of scanner positions, name it and fill in positions of scanner. In case of A46 only 1 number.
   e. For positions to be used, set Status active (= 3).
2. Figure, Display in overview.
   Define position (x,y) on the screen for each active position
3. Define groups
   Positions supposed to be used the same way, can be aggregated to groups.

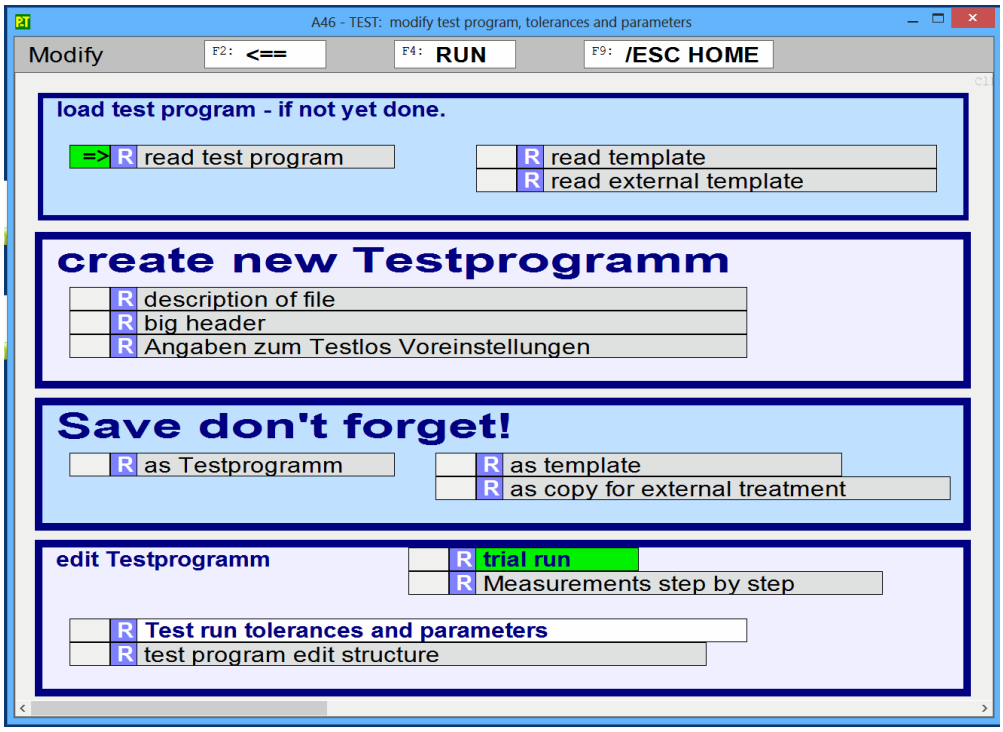
D **PAS** define sets of parameters
Components, measurements, parameter, tolerances
1. Allocate a line in the list for each measurement, which differs in measuring method, -parameter oder criterion -
   preferably by arranging / duplicating of appropriate templates
2. CRIT Test criteria select or create and fill in tolerances.

E **SPEC** Test Steps
1. Build test sequences for each task. Consider chronology.
2. Select sets of parameters
3. Select Pos , preferably Group

F **MStab** peruse and try out
1. Display in overviwe, Table of measured vakues and of criteria
2. Measurement step by step using a good specimen and compare measured values to expected values.
3. trial run

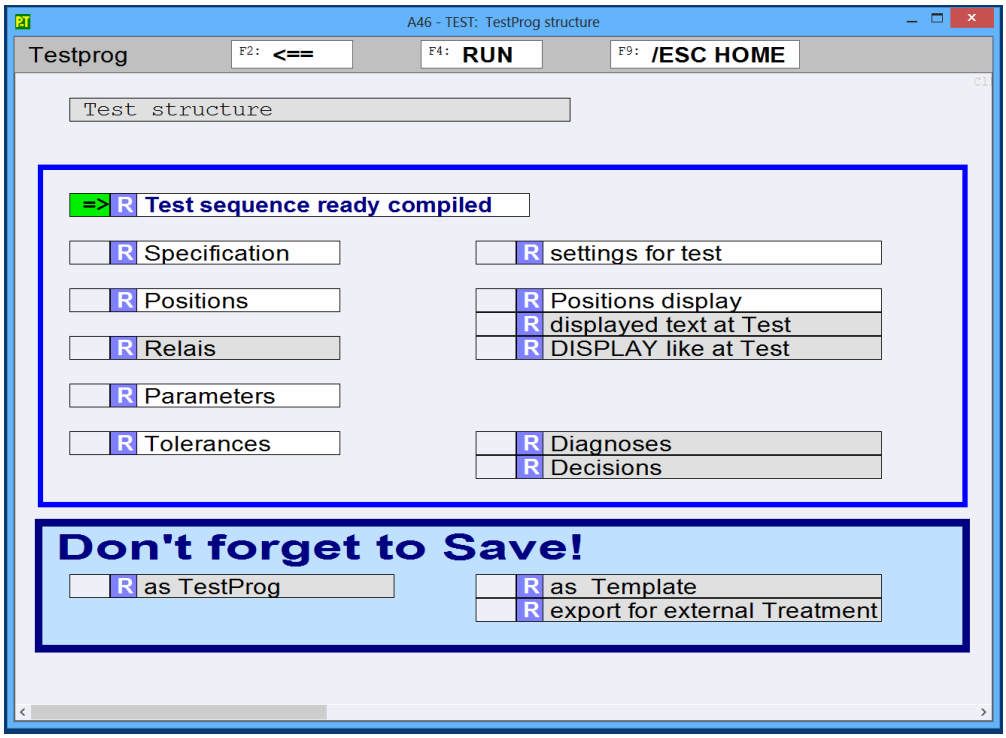
6.2 TestProg modify

Duplicate a Testprog and make minor changes like tolerances and parameters .



6.3 TestProgramm structure

Access to all parts of a Testprog.
Here all changes and add-ons are possible
from simple parameters to complicated structural changes of the test sequence.



7. SERVICE Sonderfunktionen für Spezialisten