



Software for Controlling
ZERA Meter Test Systems

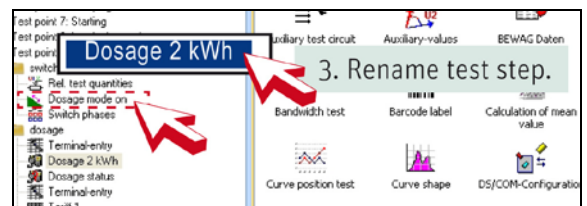
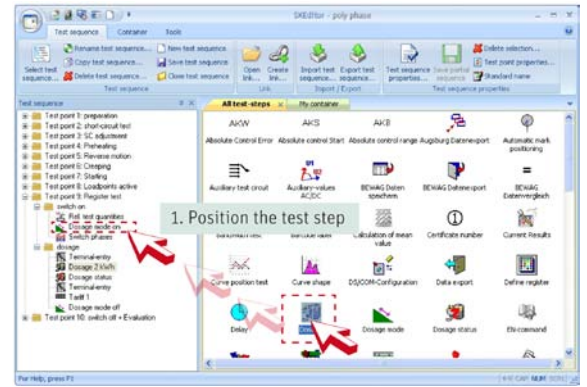
The purpose of WinSAM's – control of Meter Test Systems

WinSAM is the user interface for the ZERA meter testing devices. WinSAM consists of seven individual programs, each of which has a specific purpose. Together they form a package that covers the whole range of functions required for controlling meter test devices. WinSAM is used to configure the test device and the system environment. The system can be controlled in manual or automated mode and the operator can compile individual test sequences and data logs. WinSAM allows the allocation of individual user rights, as various tasks may be handled by different individuals.

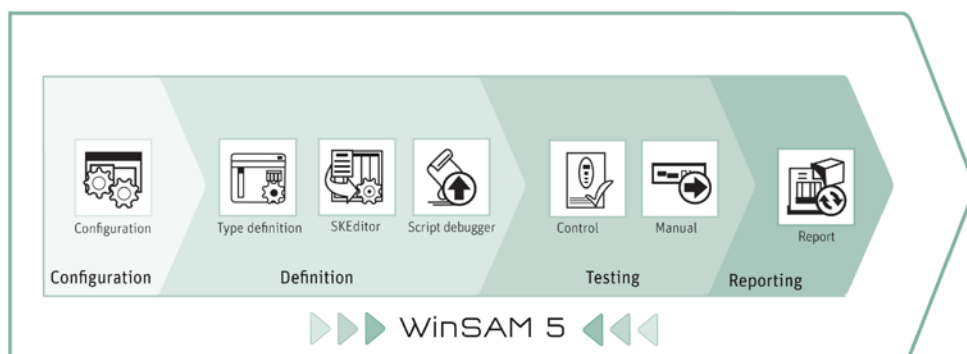
WinSAMs philosophy – Specific test procedures

Each meter type is different and the test procedure should match it exactly. The number of meter types on the market is continuously increasing and only tests that accurately match the meter specifications ensure maximum reliability of the test results.

This is where WinSAM shows its strength. It provides test sequence templates and a pool of prepared test steps, which can be used to compile a procedure that accurately matches the meter to be tested. The script debugger can be used to compile new test functions, should the test steps provided be insufficient. In this way, the tests can be optimally adapted to the meter for automated tests and ad-hoc operations.

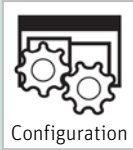


WinSAM's structure – Specialised programs

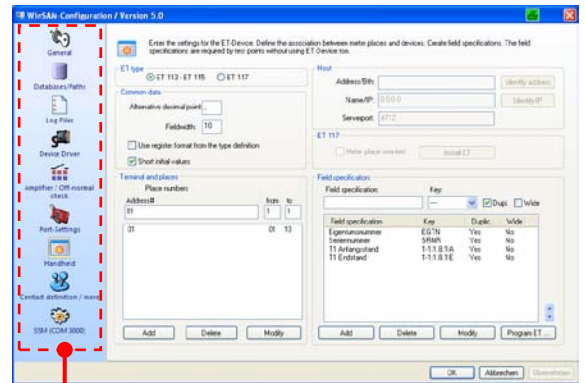


The split into several programs has an important advantage: Each program contains exactly the functions that are required for a specific task. In this way, the number of functions per program remains comprehensible and the functions are faster to find. The functions of the individual WinSAM programs are described in the following sections.

Configuration – Adapting WinSAM



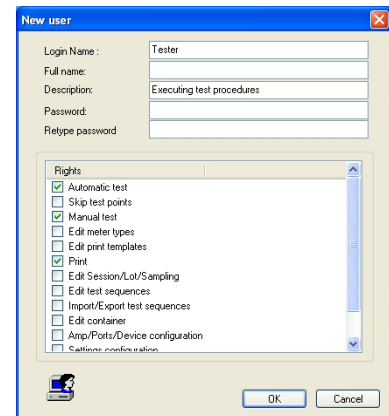
The work environments of WinSAM are usually similar but rarely identical. The Configuration program adapts WinSAM to the system environment of the customer. Information concerning the test system, user rights and similar data are entered. Examples are the definition of the devices connected to the system, entering the port setting for the device, configuring the amplifiers and auxiliary circuits and determining the settings for the input keyboard.



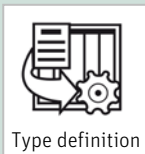
All configuration options are in one place.

Task-oriented User rights

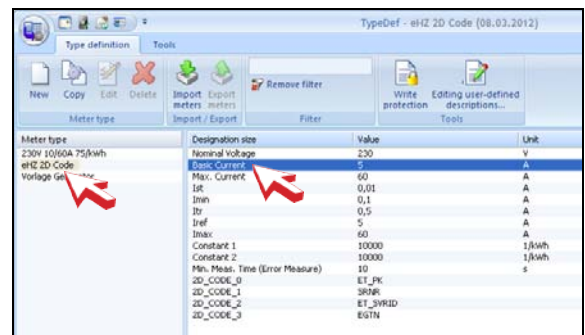
Flexibility is very important to us when working with WinSAM. The user administration of WinSAM therefore supports the task-oriented allocation of user rights. New users can be created and their rights can be defined by choosing from a range of functions. Each user receives a spectrum of rights that is tuned to a specific range of tasks – allowing optimal adaptation to the situation in a company.



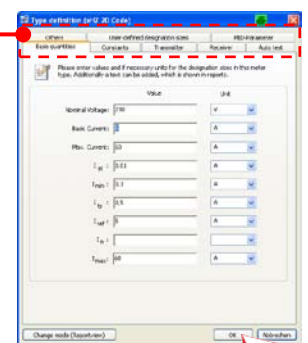
Type definition– Administration of meters



There are many types of meters, and it must be possible to test all of them according to their specifications. The Type definition program can be used to define and administrate any number of meter types. Central administration allows access to the meters from all other WinSAM programs. Type definition can be called up whenever there is a need for new meters. The name of the new meter type can be freely selected. The definition of a meter includes all its type-specific data, e.g. nominal voltage, basic current, limit current, meter constant, etc. Pre-defined variables are available for this purpose. They can be extended by user-defined variables, if required. Where there is a WinSAM access database with type definitions, the type definitions can be imported. Defined types can also be exported and used in other programs.



All menu items at a glance



SKEditor– Test sequences with drag & drop



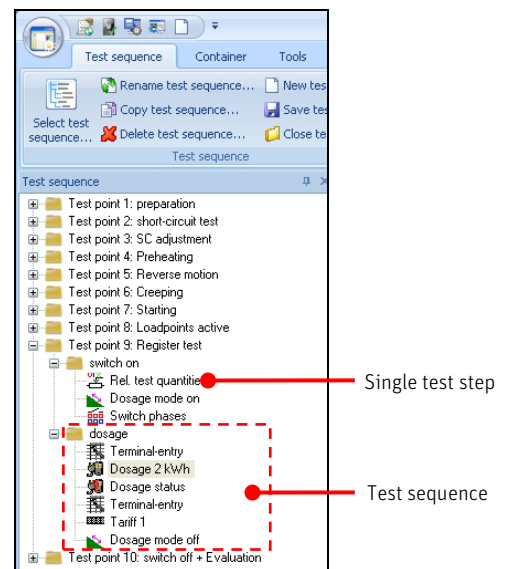
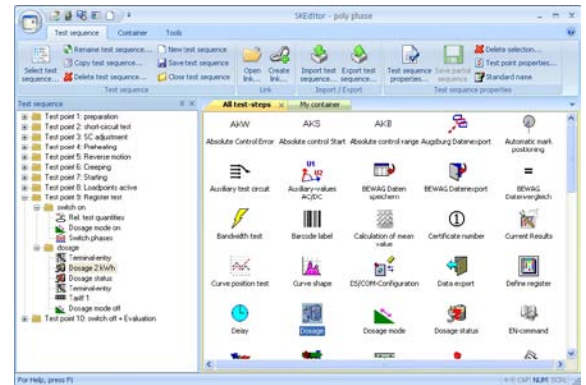
The Editor is used to compile and administrate the test sequences. It provides a wide range of options for the compilation of a test sequence. WinSAM offers a multitude of test steps that can be used as building blocks for individual test elements. It is also possible to integrate user scripts into the test sequence.

Re-usability

To prevent double work and data storage, repeatedly used test-step combinations can be stored as step chains. They can then be used in any number of test sequences, as the individual data of a test step are only entered into the respective dialog window.

When only some of the test steps present are sufficient to do the work, the user can create containers for combining the relevant test steps and step chains.

In this way, only the relevant test steps are shown. The containers can also be used to store user scripts. It is, of course, possible to import and export test sequences to use them on different computers.

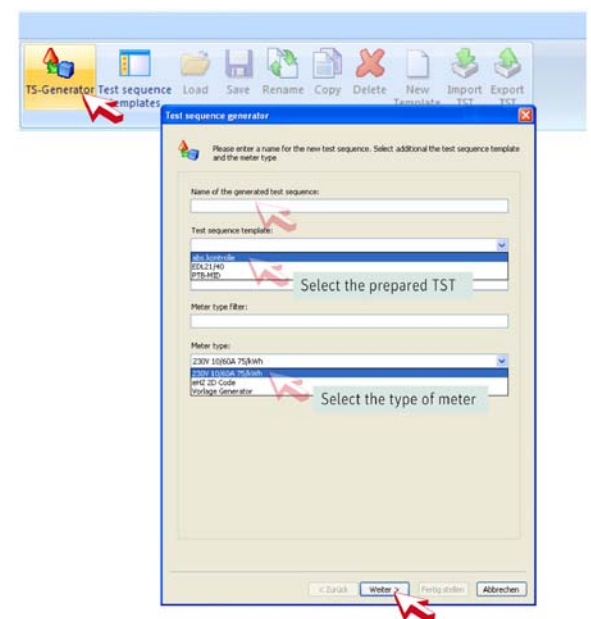


NEW with WinSAM 5 – The Test Sequence Generator

Testing and calibrating standards are generally regulating mines the method of testing of electricity meters. Up to now WinSAM only allows to create test sequences in a manual way. Now by a few mouse clicks you will get to your complex and standardized test sequence for example according to PTB/MID standards.

1. Select your test sequence template (TST).
2. Enter the parameter of the meter to be tested inside the type definition.
3. Generate the desired test sequence by pushing a button.

Optional: On request we create an individual TST according to your national standards or to customized requirements.



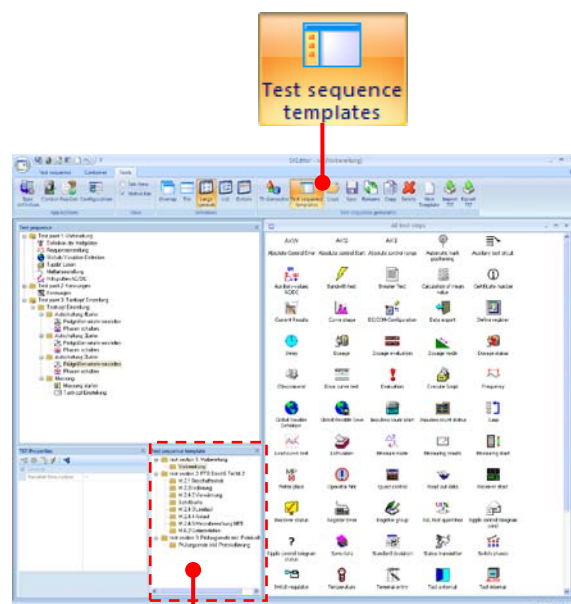
The Test Sequence Template – Details

Test Sequence Templates (TST) are required to create test sequences by the Test Sequence Generator. These templates need to be created manually only once. They are stored in the new WinSAM 5 database. A TST is basically a test sequence but includes additionally parameters such as loops and conditions parameters. When the generator will be executed the new test sequence will be generated from this template. Only test steps which are in accordance to the parameters will be considered. The loops and condition parameters as well as the specific meter data will be defined in the meter type definition of the meter to be tested. If the test sequence generator has been started the chosen TST will be linked with the selected meter type manually by the operator.

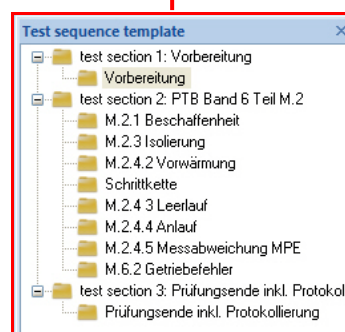
The new test sequence can now be created just by few mouse clicks. At present the following TST are available in WinSAM 5:

- Testing according to MID / PTB
- EDL21 / 40 testing
- Verification of the test bench with an external transfer-/reference standard.

Further TST can be created by the user or on request by ZERA.



Example: Window arrangement for creating a new TST

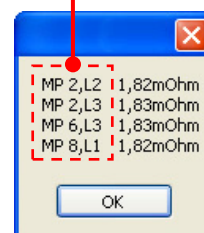


Burden Measurement*

The new WinSAM 5 provides error detection and indication within the meter contact in every phase. Independent of external conditions (e. g. pollution of contacts) or internal causes, measured values and evaluations will be indicated after the burden measurement has been performed.

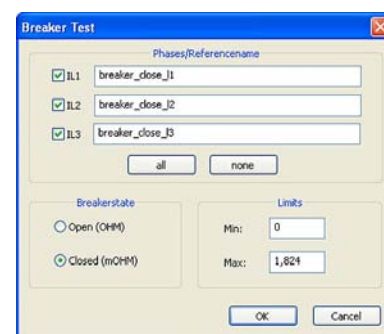
In case that the evaluation is fail WinSAM additionally shows the resistances (in mΩ) in a separate window for each meter place (MP) and phase.

List of all errors for each meter place (MP) and phase (L1, L2, L3)



Breaker Test*

Meters e. g. Smart Meters which are equipped with breaker can be tested in every current path via breaker test. For testing the contact (open or closed) a minimum of current will be send through the meter.



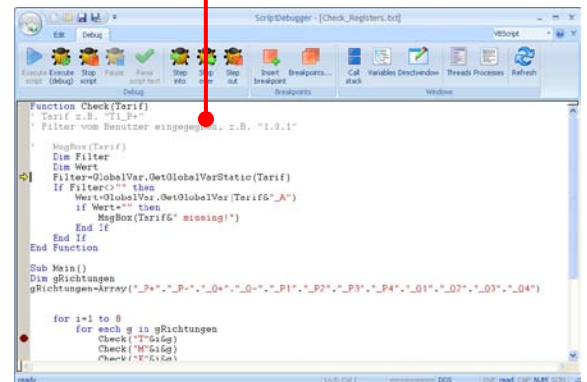
* special hardware requirements

Script debugger – For user test functions

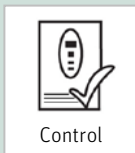


WinSAM provides a wide range of predefined test steps. However, in some cases, a special test step is required. The script debugger is used for compiling, executing and debugging scripts and provides the specialist with a complete development environment for the creation of user-specific test functions. The script languages supported are VBScript and JScript.

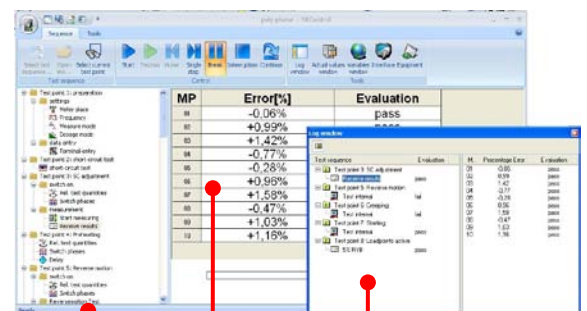
The script debugger provides all functions required for editing and testing of scripts in VBScript or JScript



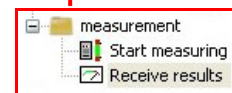
Control – For automated operation



The controller can handle an automated test completely separately from the compilation of a test procedure. However, the editor can be called upon at any time to change the sequence. The author can therefore test the sequence without burdening the tester with unnecessary work. Each execution is preceded by a control run to check the plausibility of the individual test steps. Thereafter, the program controls the whole test system, receives measuring values and test results, evaluates them and writes them into the database. The collected results can be shown in the log window. Individual settings, e.g. repeating or skipping of single test steps, are possible.

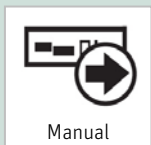


Parameter in detail



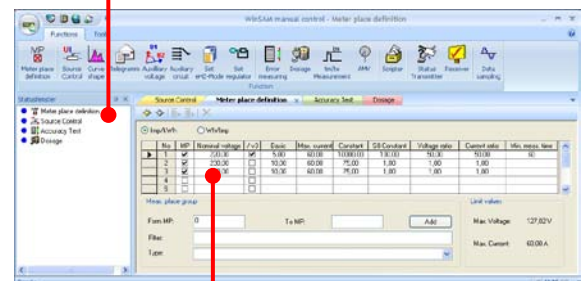
All test results in an overview

Manual – For ad-hoc operation



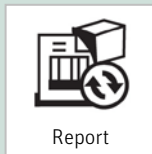
Sometimes, it is not necessary to execute an entire test sequence as only individual functions are required, for example to check the technical specifications of a counter before compiling an automated test sequence. The **Manual** program is used for manual control of the entire test system (ad-hoc operation). It allows direct execution of individual functions without the need to integrate them into a full test sequence. Several test steps can be open at the same time. They can be viewed and executed independently of each other. Test steps executed with the **Manual** program are not included in the test log.

The status window shows all open functions.



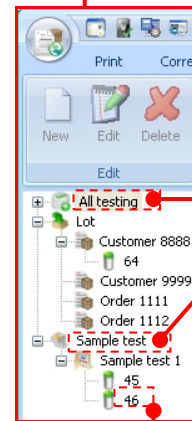
Test values are entered and functions are executed in detail view.

Report – Test reports of the automated tests



The test reports of the automated tests are generated and administrated with the **Report** program. The number of sessions listed in the log can be limited with user-defined filters. A wide range of tools is available for processing the logged data: logs for all or individual measuring stations, a special random sampling log, statistics of the ratio of good and bad ratings, log with mean, range and standard deviation of all measured error values, error curve for all error values measured during selected sessions with highlighting of the error band. It is in all cases possible to print all sessions or only the selected sessions, irrespective of the processing vision chosen. The print templates for the logs can be individually configured with regard to test parameters, test results and header data. Test runs can be allocated to a **batch** to sort tests according to orders or customers. For random sampling tests, test procedures are allocated to a **random sample**. In the log, this test is automatically allocated to the respective charge or random sample.

Session number	Date	Start	End	Test Sequence
75	01.04.2009	16:15:30	Session is open	poly phase
76	01.04.2009	16:12:27	Session is open	poly phase
77	01.04.2009	16:07:47	Session is open	poly phase
78	01.04.2009	16:07:15	Session is open	poly phase
79	13.03.2009	10:50:10	Session is open	WV Entard_2
80	13.03.2009	10:45:44	Session is open	WV Entard_2
81	13.03.2009	10:25:52	Session is open	WV Entard_2
82	13.03.2009	09:55:50	Session is open	WV Entard_2
83	13.03.2009	09:55:27	Session is open	WV Entard_2
84	13.03.2009	09:55:04	Session is open	WV Entard_2
85	13.03.2009	09:54:47	Session is open	WV Entard_2
86	13.03.2009	09:51:52	Session is open	WV Entard_2
87	13.03.2009	09:50:49	Session is open	WV Entard_2
88	13.03.2009	09:50:25	Session is open	WV Entard_2
89	13.03.2009	09:50:31	Session is open	WV Entard_2
90	13.03.2009	09:50:03	Session is open	Charge A:200
91	13.03.2009	09:50:01	Session is open	WV Entard_2
92	13.03.2009	09:50:52	Session is open	WV Entard_2
93	11.03.2009	08:54:52	Session is open	WV Entard_2
94	11.03.2009	08:54:28	Session is open	WV Entard_2
95	05.03.2009	15:36:51	Session is open	WV Entard_2
96	05.03.2009	15:36:54	Session is open	WV Entard_2



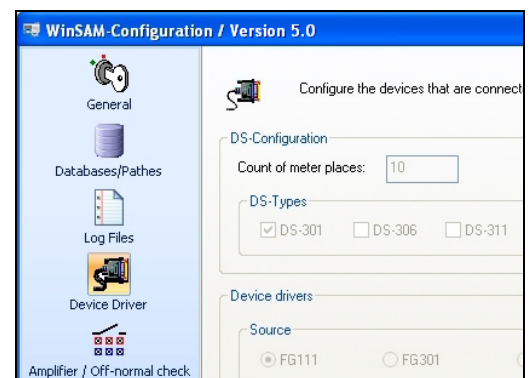
Tests can be allocated to batches or random samples.

Measuring position	Property number	Serial number	Evaluation
1	123456	5555-9	Bad
2	234567	5555-8	Bad
3	234561	5555-7	Bad
4	234587	5555-8	Bad
5	124563	78421	Bad

Example: Detailed view of a test

Test it – WinSAM in demo mode

WinSAM offers an unlimited test version. You receive a test version, which allows you to try out and get familiar with the basic functions of WinSAM. The hardware is simulated in a standard configuration. It is not possible to control a system with this version because of the missing dongle.



System Requirements

Operating system	Windows 7 (32 and 64 Bit)
Processor	min. Core-i processor
RAM	min. 4 GByte
Interfaces	4 x USB. An extension may be required depending on the ordered options.
Drives	DVD-ROM
Memory space	Recommended 200 GB memory min. 40 GB memory

Optional Conditions

Remote maintenance/ diagnosis	The ZERA service gets into connection with the control PC for remote maintenance or diagnosis. This requires internet access.
Monitor	min. 22", recommended 2 x 24"
Audio	We recommend operation with sound bar.