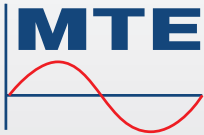
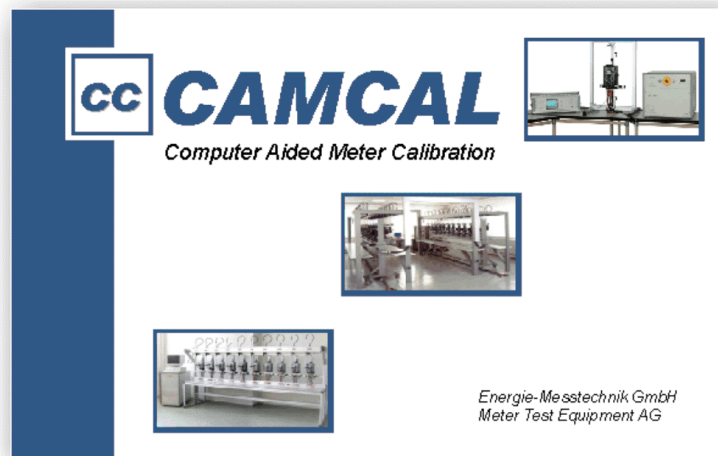


Manufactured by:



CAMCAL® for Windows

Software Package for Meter Test Equipment



CAMCAL® for WINDOWS is a comprehensive software package designed to fulfil the current requirements of the modern meter testing environment but also provides the flexibility to easily incorporate future meter testing requirements.

CAMCAL® for WINDOWS software allows the control of both static and portable meter test equipment, including the recording and evaluation of meter and measurement data.

CAMCAL® for WINDOWS software can be used throughout the meter test environment. Tests can be carried out for simple or highly complex meters in accordance with the customers requirements and national / international test and calibration regulations (e.g. PTB, IEC, ANSI).

Advantages of CAMCAL® for Windows

- User-friendly operation
- Database for meters and test sequences
- Fully-automatic test sequences for meter testing
- Transparent evaluation and presentation of results and statistics
- Suitable for use with various hardware combinations
- Modular system allows the integration of customer specified applications
- Operator interface available in several languages

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CAMCAL® for WINDOWS software combines the various functional modules required in modern meter test systems, with a common and consistent user interface.

The modular system allows control of various hardware units with a common software platform. Functions for laboratory or on-site measurement are provided together with the ability to test highly complex modern meters with integral tariff devices.

The user interface of the basic version shows all the essential information required, therefore making the system easily understandable to operators with limited technical knowledge.

Automatic meter testing

Automatic meter tests are executed in three steps:

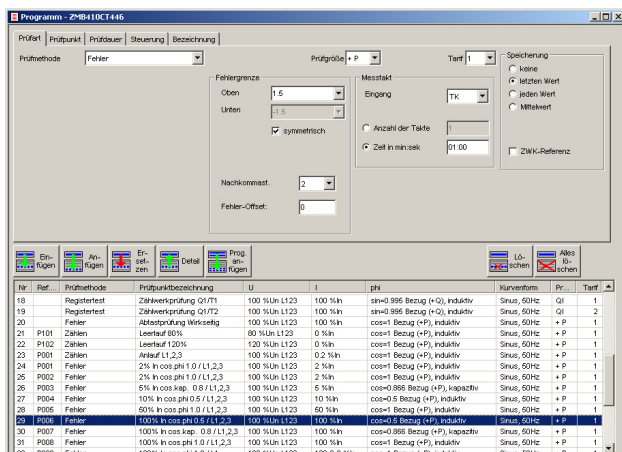
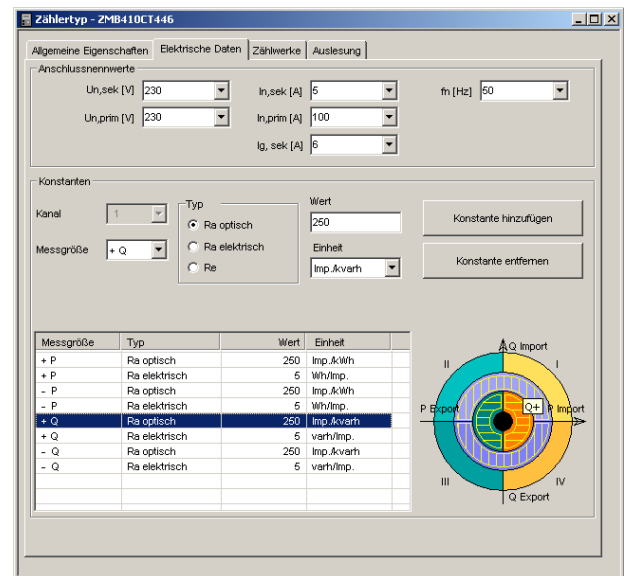
1. The user defines meter type descriptions and test sequences
2. The test is executed and the results are stored in the database
3. The results can be presented in a simple test results form, or be post-processed for presentation in form of a report. Additional options include automatic generation of files for importing into customers metering/asset database for instance

Meter type description

The meter type description contains the electrical and functional definitions of meters under test (connection values, constants, registers, ...).

For the tariff device communication, a communication module is assigned to the meter types. This defines the data to be selected or programmed plus the dispatching commands, adaptable by the customer, makes the fully automatic examination of high-functional meters and tariff devices possible.

The basic version supports the communication protocol in accordance with that described in the IEC 62056-21 Mode C standard. As an additional option the communication protocol is prepared according to dlms / COSEM.



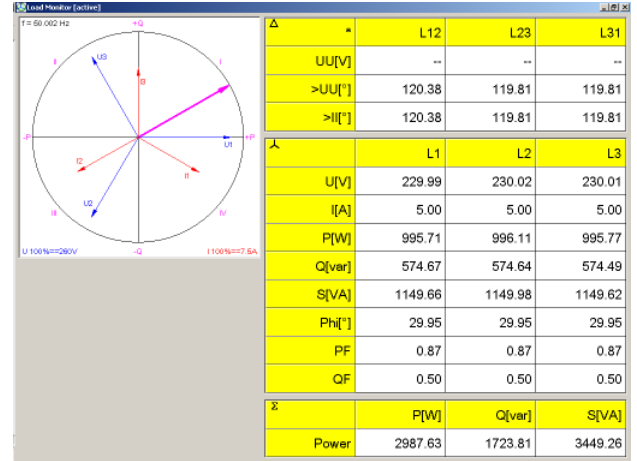
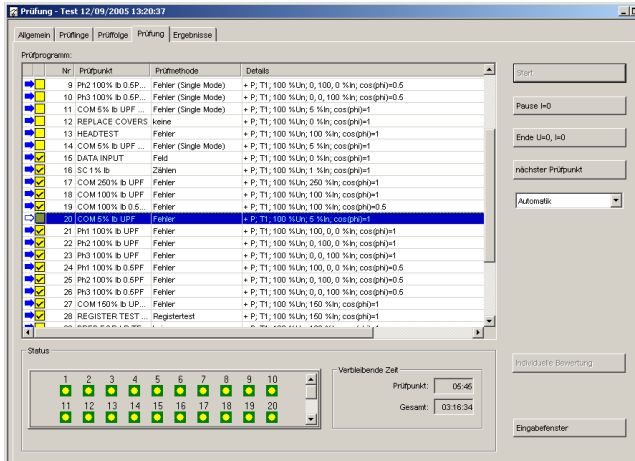
Test sequence

A test sequence describes the order and content of the various test steps in a sequence. For each test step the desired test quantities (current, voltage, phase angle, frequency, ...) are specified.

In addition to the respective test method (e.g. error measurement, register tests, ...) each checkpoint can be linked with control commands. Control commands display for instance instructions to the operator, switching of tariff relays or dispatching of commands e.g. to adjust time, ...

Meter testing

The user allocates to each active measurement position a meter type and selects a test sequence. Subsequently the user will comfortably be guided through the test. The actual status of the test and active test point is clearly indicated at all times. It is possible to display simultaneously the actual test values and/or results in their own windows using large, easily visible fonts.



Results

After executing an automatic test sequence all saved results are available for further data processing, such as creating an individual test report or export to Excel tables. The results can also be viewed and evaluated directly using several sort criteria in the database.

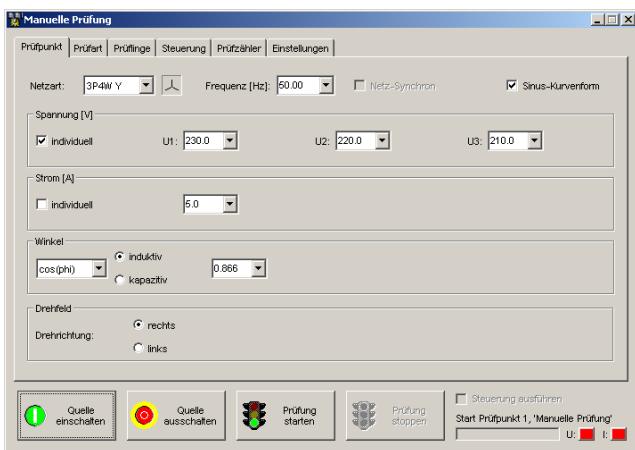
The CAMCAL Report Generator, enables the user to create and define their own protocol masks (calibration certificates, pass/fail reports, Statistical reports, customer reports etc). Furthermore the CAMCAL Report Generator has the flexibility to add to reports logos, diagrams and fields (e.g. for signatures) etc.

Prüfprotokoll für Elektrizitätszähler

Zählerart	Zählerstand	Spannung	Strom	Ergebnis	Messdatum	Messort	MTE
Zählerart: 230V	Zählerstand: 250	Spannung: 230V	Strom: 5A	Ergebnis: MTE	Messdatum: 25.08.2007	Messort: 20	MTE

Apparat-Nr. (R.Nr.)	917401	917402	917403	917404	917405	917406	917407	917408	917409	917410
Baugruppe	3007	3007	3007	3007	3007	3007	3007	3007	3007	3007
Zählerstand S.L1										
Isolationsprüfung	+	+	+	+	+	+	+	+	+	+
Leitfähigkeit	+	+	+	+	+	+	+	+	+	+
Leitwert 0%	+	+	+	+	+	+	+	+	+	+
Leitwert 100%	+	+	+	+	+	+	+	+	+	+
Abgleich (R.S.T.)	+	+	+	+	+	+	+	+	+	+

Prüfpunkt	0.05%	0.05%	0.11%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.04%
2% In range 1.0 (L1,2,3)	-0.10%	-0.10%	-0.10%	-0.09%	-0.04%	-0.08%	-0.07%	-0.06%	-0.09%	-0.09%
5% In range 0.5 (L1,2,3)	0.05%	0.05%	0.12%	0.05%	0.05%	0.04%	0.04%	0.05%	0.05%	0.04%
5% In range 1.0 (L2)	0.04%	0.03%	0.03%	0.04%	0.03%	-0.01%	0.03%	0.07%	0.02%	0.01%
5% In range 1.0 (L3)	0.05%	0.03%	0.14%	0.05%	0.03%	0.07%	0.05%	0.05%	0.07%	0.07%
10% In range 0.5 (L1)	-0.02%	-0.02%	0.05%	0.04%	0.02%	-0.03%	0.01%	0.02%	0.01%	-0.02%
10% In range 0.5 (L2)	-0.13%	-0.10%	0.05%	-0.12%	0.05%	-0.12%	-0.10%	-0.07%	-0.05%	-0.12%
10% In range 0.5 (L3)	-0.03%	-0.07%	0.07%	-0.04%	0.01%	-0.01%	0.00%	0.00%	-0.01%	-0.01%
100% In range 0.5 (L1,2,3)	0.03%	0.01%	0.11%	0.05%	0.05%	0.02%	0.03%	0.05%	0.04%	0.03%
100% In range 1.0 (L1,2,3)	0.05%	0.04%	0.13%	0.05%	0.05%	0.04%	0.04%	0.05%	0.05%	0.05%
Senkrechtprüfung -FK2	0.05%	0.04%	0.13%	0.05%	0.05%	0.04%	0.04%	0.05%	0.05%	0.05%
Senkrechtprüfung -RM4	0.05%	0.04%	0.13%	0.05%	0.05%	0.04%	0.04%	0.05%	0.05%	0.05%



Manual control

The manual control module allows a simple quick check of a meter its accuracy and other functions. This module has an interface which directly controls the various parts of the system such as power source, reference standard and error evaluation system.

Additional standard functions of the CAMCAL® for Windows Software

Testing of modern meters requires an adaptable and flexible software package. Because of its modular design, CAMCAL® for Windows is able to provide this requirement.

CAMCAL® for Windows Software meets the following requirements:

- Modular extensions of semi-automatic and fully automatic systems are possible without extensive software adaptations
- Demonstration programmes allow training to be given before delivery of the test system
- Standardized meter type and test sequence definitions considerably reduce the need for extensive training and familiarisation
- Data export modules support data transfer to other systems
- The operator interface is available in many different languages
- Password protection is provided for different user levels
- Import and export functions enable the easy transfer of meter types , test sequences, report protocol masks etc. between test systems or across sites or between manufacturers and customers for instance.

Optional Software Modules

- Tariff device communication / dlms
- Generation of harmonics
- Tariff device testing with pulse transmitter
- Error compensation
- Generation of ripple control signals
- Generation of special test signals and wave shapes according to IEC 61036

Customer specified adaptations

MTE is able to provide customer specified modules which can be integrated into the standard software for fully automatic calibration of modern meters. MTE also supports the integration of alternative communication protocols for tariff devices.

**Discover how we can help you with quality
and efficient solutions that will improve your business.
Contact us at (02) 867 5620 or email us at info@ppi.ph.**