Product Range 2016

Meter Test Systems
Instrument Transformer Test Systems
Precision Laboratory Systems
Software

Sold & Serviced in USA by:

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Portable Meter Test Systems

Portable meter test systems of ZERA cover reference meters, primary standards, test systems as well as current and power sources. All measurements can be performed according to IEC standard.

Reference meters with accuracy classes 0.2 to 0.02 are commonly used for testing of meter installations and for observing error limits of electricity meters on-site.

The primary standard with accuracy class 0.01 is used for very accurate testing of meters and reference meters.

Test systems are reference meters with integrated source. You can choose between systems with current source or current and voltage source. Test systems are especially useful if you need user-defined values for current and voltage while testing meter installation with only one device.
Reference Meter

MT3000
- Accuracy classes 0.02 and 0.05
- Coloured display
- Modular design
- System upgrade at any time
- Unique long-term and temperature stability of the measuring module
- Current measurement via AC-current clamps up to 300 A
- No additional error for reactive measurement
- Ratio test on PTs and CTs by simultaneous measurement of both primary and secondary values in CT connected metering systems
- Testing of voltage, current and power transducers
- Functions amongst others:
  - Harmonic measurement
  - Error measurement
  - Burden measurement
  - U/I transformer test
  - tM/tE transmitter test
  - Long-time measurement
  - Selective power measurement
  - Data readout meter
  - Automatic operation (as option)

Also available with accuracy class 0.1 as MT360

MT310
- Accuracy class 0.1
- Functions amongst others:
  - Actual values
  - Error measurement
  - Harmonic measurement
  - Burden measurement
  - 1 transformer testing (as option)
- Also available with accuracy class 0.05 as MT320
- MT310/MT320 also available as CAT IV device

MT30
- Accuracy class 0.2
- Functions amongst others:
  - Actual values
  - Error measurement
  - Vector and curve display
  - Harmonic measurement
- Also available as single-phase device MT10
- MT10/MT30 also available as CAT IV device

MT365
- Accuracy class 0.05
- Coloured display
- Functions amongst others:
  - Vector and curve display
  - Harmonic measurement
  - Error measurement
  - Service function
  - Automatic operation (as option)
- Also available with accuracy class 0.1 as MT360

MT310/MT320MT10/MT30

Single modules can be combined
Test Systems

**MT78x**
- Accuracy class 0.1
- Coloured display
- Three-phase fully automatic test system with integrated current source
- Current generation from 10 mA up to 120 A
- Voltage generation from 40 V up to 500 V
- Verification of the load conditions on metering installations
- Functions amongst others:
  - Vector display
  - Harmonic measurement
  - Error measurement
  - Automatic measurement
  - Selective power measurement (as option)
- Also available with accuracy class 0.05 as MT786

**MT68x**
- Accuracy class 0.1
- Coloured display
- Three-phase fully automatic test system with integrated current source
- Current generation from 10 mA up to 100 A
- Verification of the load conditions on metering installations
- Functions amongst others:
  - Vector display
  - Harmonic measurement
  - Error measurement
  - Automatic measurement
  - Selective power measurement (as option)
- Also available with accuracy class 0.05 as MT686

**MT680s**
- Accuracy class 0.1
- Coloured display with touch screen
- Single-phase test system with integrated current source
- Testing of energy meters for accuracy classes 1 and 2 in 2-wire circuits
- Current generation from 10 mA up to 120 A
- Functions amongst others:
  - Error measurement
  - Vectorial display
  - Free programmable load point settings for current generation
  - Automatic operation
  - Selective power measurement (as option)

Integrated current and voltage source

With trolley available - see page 12

MT680s compared with single-phase meter
Voltage and Current Sources

MT551
- Three-phase power source
- Current generation up to 120 A
- Voltage generation up to 500 V
- 10.4” touch screen
- Individual load point programming in four quadrants
- Automatic control via MT3000 or MT345 possible
- Energy dosage
- Available interfaces: RS232, Bluetooth and USB

MT500/MT400
- Three-phase voltage* and current source
- Current generation from 4 mA up to 12 A
- Voltage generation* from 40 V up to 300 V
- Adjustable power factors
- Individual load point setting
- Synchronization of the test currents on the existing test voltage phases of the meter under test (only MT400)
- Functions amongst others:
  - Actual values
  - Vectorial display

* only available for MT500

Accessories

AC Current Clamps MT3430/MT3422
- Current measurement up to 120 A
- High accuracy in the range of 50 mA ... 120 A
- Suitable especially for burden measurement
- MT3430 for MT30, MT3x0, MT36x, MT681 and MT78x
- MT3422 for MT3000
- Also available as single-phase clamp MT3431 for MT10 or MT680s

AC Current Clamps MT3416/MT3417
- Current measurement up to 300 A
- Suitable for cable diameters up to 53 mm
- MT3416 for MT30, MT3x0, MT36x, MT681 and MT78x
- MT3417 for MT3000

AC Current Clamps MT3403
- Current measurement up to 1200 A
- Suitable for cable diameters up to 53 mm
- Combinable with all devices of MT-series

Flexible AC Current Probe
MT3404/MT3411/MT3415
- Current measurement up to 10.000 A (MT3404)
- Current measurement up to 2.000 A (MT3411/MT3415)
- Combinable with all devices of MT-series
Temperature Sensor
- MT3450 for temperature registration on-site
- Useable for all portable devices of the MT series
- Temperature indication on MT display

Quick Connection Cables
- For voltage and/or current connections
- For all three-phase devices of the MT series
- For safe connection between device and meter under test
- Various designs and phase colours

Transport Cases and Bags
- Aluminum cases for MT devices and accessories, all sizes
- Nylon bag for accessories with smooth-rolling wheels and telescopic handle

Trolley System
- Trolley transportation systems for MT681 or MT78x with pneumatic tires or as standard system
- 3-stages extendable pull-out handle
- Via snap-lock system the device case can be securely fixed and easily released

Scanning head TK118-05
- Detection of LED signals of electronic meters
- Fixing via provided suction cup or via optionally available stretchable holding device for scanning heads TK326/TK118

Thermo Printer Set
- Printing of measuring results on-site
- Connection via RS232 interface
- Set contains of Software option ‘Print’, thermo printer, AC adapter, interface cable, battery pack and thermal paper

Many more useful accessories as*
- Carrying strap for MT10, MT30, MT3x0
- Protection cover for MT3xx/400/500
- Start-stop push button for signal entry
- Several software options depending on the device as I-transformer testing, selective power measurement etc.

* for further information see MT product catalogues

Example of use. Meter not in scope of delivery.
Stationary Meter Test Systems

Stationary meter test systems are suitable for economic testing of all types of meters as well as static meter of class 0.2. The wide range reference standard EPZ is used as working standard class 0.02 of the meter test system. If a higher accuracy is required the EPZ can be replaced by a comparator COM with accuracy class 0.01.

All measurements can be performed according to actual standards e.g. IEC. The modular system allows an individual and customized configuration for hard- and software.

A system upgrade is possible at any time.
Components Power Source System

Frequency Generator FG301
- Frequency generator FG301 as central unit of the synthetic waveform generation
- Generates the set points for the digital control of the power amplifier units
- Carries out the closed-loop control of the test settings and controls changeover operations during the test procedure.

Reference Meters EPZ303
- Wide range substandard meters EPZ303 and EPZ103 as working standard of meter test systems
- Serves for power proportional pulse frequency
- Designed to measure actual values for test voltage, test current, test power and phase angle per phase
- Test values are indicated on an external monitor
- Accuracy class 0.02

Reference Meters COM3003
- Optional the reference standard EPZ303/EPZ103 can be replaced by a comparator COM3003/1003
- Accuracy class 0.01
- Further information can be found on page 40

Reference Meters COM5003
- Optional the reference standard EPZ303/EPZ103 can be replaced by a comparator COM5003
- Accuracy class 0.005
- Further information can be found on page 41

Power Source Systems - MTS series

The product series MTS is based on digital switch mode amplifier modules and allows the combination of the different amplifiers with the function generator FG301 to a MTS-power source system. ZERA provides three-phase sources MTS301, MTS310, MTS320 and MTS340 (for 1 up to 40 test positions) and single-phase sources MTS110 and MTS140. All source systems of the MTS3xx and MTS1xx series are also available with castor wheels.
**Amplifiers**

**VI201/VI202**
- Test current amplifier for AC output currents up to 120 A
- Max. output power: 2000 VA (VI201)
- Max. output power: 2800 VA (VI202)
- Optional up to 160 A (VI201)

**VI221/VI222**
- Test current amplifier for AC output currents up to 120 A
- Max. output power: 600 VA (VI221)
- Max. output power: 1200 VA (VI222)

**VU211**
- Test voltage amplifier VU211 for AC output voltages up to 480 V
- Max. output power: 1000 VA (optional 1500 VA)

**VU221**
- Single- or three-phase test voltage amplifier VU221 for output voltages up to 320 V (AC and DC)
- Max. output power: 500 VA

**VUI301**
- Combined single-phase current and voltage amplifier VUI302 for output voltages up to 320 V (AC) and output currents up to 120 A (DC up to 12 A)
- Max. output power voltage unit: 30 VA
- Max. output power current unit: 200 VA
- Used in MTS301 (single-position system)

*Other customer requirement on request.*

**Components Test Bench**

**SES330**
- Measurement interface SES330 serves as a power supply for the DS3xx modules as well as for conversion of the RS232 interface in the PC to the system bus
- Control is accomplished by the FG301
- Only required if DS3xx modules are used

The following DS3xx error calculators are used per test position:

**DS301**
- Additional displaying of the measured error
- In-/output for testing of SO-pulse transmitter or receiver
- tm/te maximum demand time measuring
- Testing of SO-pulse transmitter or receiver and bi-directional data transfer

**DS312**
- Can be used additionally to DS301, DS321
- In-/outputs for testing of SO-pulse transmitter or receiver
- Interface multiplexer for communication with the unit under test via RS232 (IR), RS485 or M-bus

**DS321**
- Can be used additionally to DS312
- In-/outputs for testing of SO-pulse transmitter or receiver

Other customer requirement on request.
The following scanning heads are used per test position:

**TK325**
- Scanning head TK325 to scan rotor marks and LEDs of electronic meters
- The TK325 can detect the switching edge of a pulse and allows the automatic starting- and no load test on ZERA test systems
- Is used for advanced scanning head suspension
- Can be combined with all DS devices

**TK326**
- Scanning head TK326 is able to scan rotor marks and LEDs of electronic meters
- The TK326 can detect the switching edge of a pulse and allows the automatic starting- and no load test on ZERA test systems
- Is used for simple scanning head suspension
- Can be combined with all DS devices
- Also useable with portable reference meters of MT series (see page 6ff)

**TK117**
- Scanning head TK117 serves for data communication between the unit under test and the test system.
- Connection e. g. with error calculator DS301
- Can only be used with electronic meters
- Can only be used in combination with DS301 and DS311.

**DS421**
- Multi-user error calculator DS421 is designed as slide-in unit
- Used for testing up to 20 energy meters
- Can only be combined with DSA400/DSA401

**DSA400**
- LCD display unit DSA400 displays the error values during the test procedure
- Can be combined with DS421

**CCM1001**
- Measuring and connecting adapter CCM1001 to inspect the test circuits for U-I-shorts before and during the test procedure
- Communication is performed via WinSAM

*Example of use. Meter not in scope of delivery.*
### Current and Voltage Transformers

**ICT12x**
- Three-phase error-compensated isolated current transformer of ICT series to supply galvanic isolated test current to meters with closed link
- Choose between stand-alone* device or installation in a system
- Integrated self-protection
- Communication via WinSAM
- One ICT serves for one test position

*not available for ICT127 and ICT129

**ICT123/ICT129**
- Max. current range 120 A
- Burden measurement/breaker test (ICT123)

**ICT125/ICT126**
- Max. input current 160 A
- Max. output current 160 A (ICT125; 1:1)
- Max. output current 320 A (ICT126; 1:2)
- Burden measurement/breaker test

**ICT127/ICT128**
- Max. input current 100 A
- Max. output current 120 A (ICT127; 1:1/10:1)
- Max. output current 240 A (ICT128; 1:2)
- Burden measurement/breaker test (ICT127)
- High accuracy < 12 A (ICT127)
- Compact design allows integration into ZERA standard test benches

**MSVT**
- Multi secondary voltage transformer MSVT to supply galvanic isolated test voltage to single-phase meters
- The MSVT serves optionally for 10 or 20 test positions

### Additional Components

**HK301**
- Auxiliary circuit module HK301 for switching auxiliary circuits in meter testing units
- Can only be used in combination with power source MTS301

**K118**
- Adapter K118 to convert AC potential linked contacts to the required DC voltage level for the SO-Input of the DS301 or DS311

**Test Point Buttons**
- Buttons to control the automatic test procedure during adjustment of meters
- Load points can be controlled by pressing the button (previous/next test point)

**Automatic Rotor Mark Positioning AMV**
- Built-in module AMV/301 for automatic rotor mark positioning of Ferraris meters
- Beneficial before STARTING or NO LOAD test
- This module is also available as pluggable unit
- Built-in and pluggable modules can only be used with DS301

**MSVT**
- Multi secondary voltage transformer MSVT to supply galvanic isolated test voltage to single-phase meters
- The MSVT serves optionally for 10 or 20 test positions
Scanning Head Supensions

**Scanning Head Suspension – Advanced System**
- Comfortable ball bearing suspension for scanning heads, adjustable in all positions
- Stoppers for safe guidance of the scanning head
- Quick height adjustment and fine adjustment for correctly positioning of the scanning head in front of the meter
- With single-position or multiple-position suspension
- Expansion possibilities of the measuring system are possible at any time
- Useable with scanning head TK325

**Basic Scanning Head Suspension**
- Functional scanning head suspension, adjustable in all positions via flap mechanisms
- Expansion possibilities of this kind of system are limited
- Useable with scanning head TK326

**Scanning Head Suspension with move-able meter rack**
- Moveable in all positions, e.g. for performing a type testing
- Quick and safe positioning of the meter under test
- Available for single- or multiple-position test systems
- Useable with scanning head TK325

**ET118**
- Handheld terminal ET118 is used for entry and transfer of meter specific data, e.g. serial no., owner no. or counter states to the WinSAM-Software
- Scanning of 2D codes, e.g. at highly complex DataMatrix meters
- Data transfer to PC via Bluetooth

**DR2791**
- External field coil DR2791 to generate a magnetic field in combination with the voltage amplifier VU221-02
- Testing, if the magnetic field disturbs the measurement of the meter
- If required also available with one position meter rack/quick connecting device

**ZZ8292**
- Half-wave rectification ZZ8292 for separating the test current in positive and negative half-waves
- Available as stand-alone device or integrated into a system.
Quick Connecting Devices

- Minimize preparation and connection time for meter testing
- Avoid incorrect meter connections which can lead to destruction of the meter under test or the measuring system
- Continuous currents up to 120 A
- Connect all auxiliary circuits, test voltage and test current via one adapter
- Special adapters for different meter types

Adapter for

- 60 A/80 A meters
- High current meters (100 A/120 A)
- Sym² meters
- Socket type meters (ANSI)
- CT operated meters
- eHz meters
- Single- or three-phase meters
- Further designs available on request

Different Types of Test Benches

Multiple Position Test Bench

Test bench with:
- 10 test positions
- 19" bottom section
- Scanning head suspension – basic system
- Standard test benches with 5, 10, 20 or 40 test positions
- Further designs available on request

Special Designs

Example:
- Test bench with 28 test position for single-phase meter testing of 14 meters simultaneously
- Pneumatically operated protective cover with integrated scanning heads for safe placement of meters while performing a test procedure.
- MSVT
- Further designs available on request

Single-position Test Bench

Test bench with:
- One test position
- DS3xx modules
- Scanning head suspension – advanced system
Different Types of Test Benches

Tunnel and Trolley System
- A stationary tunnel system is connected to the power source
- The respective trolley system is connected to the test bench via plug connection
- Interlock mechanism for fixing the trolley at the tunnel system
- The test bench is equipped with scanning head suspensions and emergency-stop-push-buttons

Trolley System
- Trolley system with 20 test positions
- Flexible placement of the meters under test by the use of a second trolley system which saves tooling-time
- Trolley system is equipped with a quick-connecting device for meters

Side Cabinet
- Side cabinet e.g. for measuring and connecting adapter CCM1001, calibration panel for absolute testing, MSVT and error calculator DS421 or measurement interface SES3330

Semi-automatic Test Systems
- Semi-automatic function test
- Manual load and unload of the units under test, automatic testing procedure.
- Drawers for two-way load
- No time-off for changing the units under test.
- While one lot of 6 meters is under test the other lot can be exchanged.

Test procedure
- Verification of power line communication (PLC)

Automatic Test Systems
- Automatic function test
- ZERA test systems can be integrated in customer production lines completely.
- Meters can be transported to the next test procedure via band conveyer.
Instrument Transformer Test Systems

Stationary and Mobile Instrument Transformer Test Systems from ZERA are developed for testing current transformers (CT) and voltage transformers (PT). Stationary test systems are available for manual or automatic operation. Transformer testing serves for the accuracy test including polarity check and demagnetisation for current and voltage transformers in middle-voltage, high-voltage and extra-voltage grids according to IEC standard 60044-1, 60044-2, 60044-7, 60044-8 and 61850-9-2.

- Standard/High voltage transformer SVT/HVT
- Mobile current transformer test system
- Voltage regulating transformer VRT for generating the required voltage
- Standard current module SCM
- Stationary, automatic current and voltage transformer test system
- Standard/High voltage transformer SVT/HVT
Stationary ITTS

- Measuring of voltage/current transformers (low-, middle- and high-voltage)
- Accuracy test, polarity check, interturn insulation test and demagnetisation.
- CT one-by-one testing

Example for low and middle voltage instrument transformer CT/PT testing*:
- Mains voltage: 3 x 230 V/400 V, (50) 60 Hz
- Output voltage: 0 ... 400 V
- Output power: max. 30 kVA

- Suitable for the following CTs:
  - $I_N = 5 \ldots 6000 \text{ A}$
  - Max. $I_{Prim} = 120 \%$ of $I_N$
  - Secondary current: 5 A
  - Max. burden of CT under test: 200 VA

- Suitable for the following PTs:
  - $U_N = 120 \text{ V} \ldots 100 \text{ kV}$
  - Max. $U_{Prim} = 120 \%$ of $U_N$
  - Secondary voltages: 120 V, 115 V, 69 V
  - Max. burden of PT under test: 200 VA

- Used components amongst others:
  - Regulating transformer (variac)
  - ESVB200/WM3000U
  - ESCB200/WM3000I
  - Generating current transformer GCT6000
  - Standard current transformer SCT6000
  - High voltage generating transformer HVT130
  - Standard voltage transformer e. g. SVT100

* other customer requirements on request

ITTS Mobile

- Testing of current and voltage transformers in middle-voltage, high-voltage and extra-high voltage grids
- Accuracy test, polarity check and demagnetisation

Example voltage transformer:
- $U_N = 110/\sqrt{3} \text{ kV}$
- Max. $U_{Prim} = 120 \%$ of $U_N$
- Secondary voltages: $100/\sqrt{3} \text{ V}, 110/\sqrt{3} \text{ V}, 100 \text{ V}, 110 \text{ V}$
- Max. burden of the voltage transformer under test 158.75 VA

Example current transformer:
- $I_N = 4000 \text{ A}$
- Max. $I_{Prim} = 120 \%$ of $I_N$
- Secondary currents: 5 A and 1 A
- Max. burden of the current transformer under test 60 VA

- Used components amongst others:
  - Voltage Regulating Transformer VRT
  - SCM4000-120 (see page 35)
  - WM3000V
  - ESCB200 (see page 35)

VRT

- Voltage Regulating Transformer VRT for supply of the high voltage or high current transformer with variable voltage for testing of CTs/PTs
ITTS Mobile
• Testing of current transformers in middle-voltage, high-voltage and extra-high voltage grids
• Accuracy test, polarity check and demagnetisation
• Example current transformer:
  - I_N = 5 A up to 300 A
  - Max. I_{Prim} = 120 % of I_N
  - Secondary currents: 5 A and 1 A
  - Max. burden of the current transformer under test: 30 VA
• Used components amongst others:
  - Voltage regulating transformer VRT
  - Standard current transformer SCT
  - Generating current transformer GCT
  - Measuring equipment ME

Mobile Instrument Transformer Test Systems

VRTm2-40-40
• Voltage regulating transformer VRT to transform a fixed input voltage (400 V) to a variable output voltage (0 … 400 V)
• The VRT feeds the high current unit GCT as well as the transformer under test
• A control panel with all operating elements for the manual operation is placed on top of the VRT

MEm30
• The mobile measuring equipment MEm30 is equipped with:
  - Standard current burden SCB30
  - Measuring bridge WM3000I
  - Mobile PC

CT/PT Testing Components
Conventional Burden | SCB/SVB
• Standard current/voltage burden for measuring current/voltage instrument transformers according to IEC 60044-1/2
• Standard Current Burden SCB with adjustable steps up to 60 VA (IEC) or 200 VA (ANSI)
• Standard Voltage Burden SVB with adjustable steps up to 318,75 VA (IEC) or 400 VA (ANSI)

Electronical Burden | ESCB/ESVB
• Electronical compensated current or voltage burden ESCB/ESVB for manual and automatic test of current/voltage instrument transformers.
• User-friendly menu guidance
• 10,4" TFT mono chrome display
• ESVB/ESCB with adjustable steps up to 200 VA (IEC and ANSI)

Standard Current Module
• Standard current module SCM consisting of generating current transformer GCT and standard current transformer SCT
• Cost-effective and space-saving combination of GCT and SCT
• Less wiring due to fixed wiring inside
• Time-saving due to one-off connection of GCT and SCT
• Example SCM3000-120*:
  - Max. current 3840 A
  - Max. output power 16 kVA

* other customer requirements on request
CT/PT Testing Components

Generating Current Transformer | GCT
- The GCT for generating the test current for accuracy testing of current transformers.
- Example GCT6000*:  
  - Max. output power 36 kVA  
  - Max. test current 6000 A

Standard Current Transformer | SCT
- The values of the CT under test will be compared with the values of the standard current transformer SCT.
- Example SCT6000*:  
  - I_n 5 A  
  - Load range 1 ... 120 %  
  - Max. current 7200 A

High Voltage Transformer | HVT
- High voltage transformer HVT for generating the test voltage for accuracy testing of voltage transformers.

Standard Voltage Transformer | SVT
- Standard voltage transformer SVT for testing voltage transformer with single and double-pole connections.

Measuring Bridge | WM
- The current/voltage measuring bridges WM3000I/U are high-precision comparator units for comparing secondary signal from transformer under test (or digital information of non-conventional transformers) with a reference signal supplied by a standard device.
- Display of measuring values and control of the test procedure via touch screen.

* other customer requirements on request

Constant Current Sources
- MCCB testing  
- Thermal and magnetic tripping test  
- Line circuit breaker, motor circuit breaker
- Example for a constant current source:  
  - Single-phase  
  - Max. output power 11 kVA  
  - Max. test current 200 VA  

Constant Current Source
- Constant current sources are typically used in testing and adjusting equipment  
- The source provides a defined test current for the equipment  
- The concrete value is specified by the needs of the unit under test and is the basis for the whole project planning

Control unit SES
- The communication between electronical source and equipment runs via the control unit SES  
- In addition to the RS232 interface optically isolated in- and outputs for an SPC are provided  
- The concrete test parameters are entered at the PC or at the SPS.
Precision Laboratory Systems

PPCS – Precision Power Calibration System

- High precision, traceable calibration of measuring devices (e.g. comparator)
- Lowest measuring uncertainty from < 10 x 10^-6 (at 40 up to 60 Hz, relative to the nominal value of the apparent power)
- Output voltage from 60 V up to 480 V
- Output current from 0,1 A up to 100 A
- Used for highly accurate current, voltage and power calibration
- High measuring stability due to ZERA components that have been proven for many years
- High repeat accuracy of the measuring values
- Wide range of Harmonic generation and accurate measurement

PPCS Software

- Windows® based software (precision power sampling system) to control the system
- Software controls the device under calibration and calculates error values and measurement uncertainty
- Result will be stored in the PC
COM3003 Comparator
- Comparator
- Accuracy class 0.01
- AC/DC reference standard
- Primary standard, e.g. for metrological institutes and calibration laboratories.

- Functions amongst others:
  - Actual values
  - Vectorial display
  - Curve display
  - Harmonic measurement
  - Error measurement
  - Reference measurement

- Static and electromechanical power meters respectively instruments with power proportional frequency output can be tested in the menu “Error measurement”. The user can select between scanning head input or frequency input.

COM5003 Comparator
- Comparator
- Accuracy class 0.005
- AC reference standard
- Primary standard, e.g. for metrological institutes and calibration laboratories.

- Multi-functional Precision Instrument:
  - Simultaneous energy measurement in four measurement modes
  - Power measurement at alternating energy direction
  - Simultaneous error measurement with up to four pulses of DUT
  - Active impedance compensation at currents ≤ 100 mA
  - Operation via capacitive touch-screen

- Functions amongst others:
  - Actual values
  - Vectorial display
  - Curve display
  - Harmonic measurement
  - Error measurement
  - Reference measurement
  - Easy implementation of further measuring tasks
Software for Controlling, Visualization and Simulation

ZERA provides a series of software for simplifying the control of test sequences, visualization and management of measured data or simulating circuit errors.

Our main focus of controlling stationary Meter Test Systems is on WinSAM. Data management between portable devices and a PC as well as visualization of data can be realized by MTVis. If you want to control portable devices via PC your preferred choice would be SSM3000. With CheckCon 3 you can control transformer testing system. In addition to data management of CT/PT under test and evaluation of test results a big range of individual adjustable features is offered in this software package.
WinSAM 6
- Software for controlling Meter Test Systems
- Configuration of test device and system environment
- Compilation of individual test sequences and data logs
- Integrated generator to create defined test sequences e.g. according to MID/PTB standards
- Error detection and indication for each meter place and phase via burden measurement
- Breaker test for testing of meters e.g. Smart Meters in every current phase

CheckCon 3
- Software for controlling Instrument Transformer Test Systems
- Data management of CT/PT under test, test tables and test results will be done by integrated MS Access® runtime module
- Manual or automatic control of test procedure depending on the hardware

MTVs
- Data management software for data communication between device of the MT-series/COM3003 and a PC
- Visualization of stored measurement data
- Management of customer and meter data
- Import and export of Excel® or XML-files

SSM3000
- Software for controlling devices of the serie MT, COM, RMM and EPZ
- Automatic device identification via integrated data base
- Manual and automatic test procedures
- Recorder function for long time measurement
- Storage of all test result into Access® data base
- Export of results to Excel®

MCS | Meter Check Simulation
- Software for simulating circuit errors for training purposes
- Simulation of polarisation, exchange of voltage and current phases, bypass or wrong rotary field