GOSSEN METRAWATT

CAMILLE BAUER

MEASURING AND TEST TECHNOLOGY 2021 / 2022

MAIN CATALOG





EDITORIAL



Marcel Hutka
Managing Director
Gossen Metrawatt GmbH

Dear reader,

Safety – what does safety actually mean? The state of being safe, protection from danger or harm, the greatest possible degree of freedom from danger – this is how it's defined in the dictionary. But safety is more – safety is fundamental. Our daily activities and work are dedicated to this guiding principle.

GOSSEN METRAWATT is synonymous with safety made in Germany. We've been accompanying our customers in their daily work and challenges in the area of electrical safety with our spectrum of products and services since 1906. And over the decades, we've been able to contribute significantly to the development of measuring technology with our innovative spirit.

Measuring and test technology is not being left untouched by digitalization. As a result of digital networking amongst energy, data and communications technologies, requirements are becoming more and more expansive for the testing of electrical safety, data management and power analysis. Intelligent test instruments, measuring technology and software solutions assure that our customers are always on the safe side – and will be in the future as well. We take advantage of digitalization to make daily work with our instruments and analysis tools even simpler, as well as more flexible and dynamic. Our new cloud platform provides you with innovative digital services for more transparency and convenience, as well as increased efficiency for your test data and test management systems. By continuously expanding and further developing functions, new features and applications, we ensure a future-proof platform solution to meet your needs in the field of measuring and test technology – it pays to take a look!

This current edition of our main catalog places our comprehensive product portfolio for measuring and test technology directly at your fingers. You'll find lots of new products in this issue, for example battery and e-mobility test technology, as well as innovative measuring and test technology for electrical safety and power quality.

Our sales team would be happy to answer any questions you might have – either digitally or personally.
We look forward to hearing from you – get in touch with us!



WELL INFORMED

Our diverse information channels keep you up to date continuously and provide you with the latest information from the green world of measuring and test technology. We inform you about current trade fairs and events, webinars and digital training offers, product presentations, standards and guidelines, as well as promotions – first hand directly from the manufacturer!

NEWSLETTER

We provide you with information at irregular intervals, roughly 10 to 12 times a year.
Register now at https://www.gmc-instruments.de/en/services/newsletter/

SOCIAL MEDIA

Follow us on the social media:

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YouTube

GOSSEN METRAWATT

XING



GERMAN INDUSTRIAL HISTORY SINCE 1906

The GMC Instruments Group and its brand names including GOSSEN METRAWATT, CAMILLE BAUER, DRANETZ, PROSyS, GOSSEN, SEAWARD and RIGEL exemplify innovation and quality in the capital goods market in the field of electronics.

GOSSEN METRAWATT in Nuremberg, Germany, is a leader in the field of measuring and test instruments and is synonymous with electrical safety, energy management solutions and power supplies. CAMILLE BAUER in Switzerland is specialized in industrial measuring technology and process engineering, and offers solutions in the fields of heavy current monitoring and position sensor technology. Products supplied by DRANETZ (USA) stand for power quality and power analysis. PROSyS (GB) offers high precision measuring clamp technology. GOSSEN (Germany) is highly successfully in the photometry market. The newest members of the group, namely SEAWARD (GB) and RIGEL (GB), offer products in the field of measuring and test technology.

Our international production facilities are located in Germany, Switzerland, England and the USA. We also demonstrate our presence in Italy, the Netherlands, the Czech Republic, Switzerland, Austria, France, Spain and China with our own on-site sales organizations.

Gossen Metrawatt GmbH is responsible for expert consultation, sales and project engineering, as well as training and support. Competent after-sales support including service, calibration and repair is assured by GMC-I Service GmbH.









1934 Relocation to the factory building purchased at Sedanstraße 20 in Erlangen.

1933 Company rebranded from Dr. Siegfried Guggenheimer AG to Metrawatt AG.

1934: 253 employees
1963: 333 employees

1939 - 1945
Changeover to production of measuring instruments for army, air force and navy.

July 1942:
1000 employees

1944 Founding of Matter, Patocchi & Co. AG which later becomes Camille Bauer AG.

1956 Conversion of the residential and commercial building at Nürnberger Straße 47, which was acquired in 1954, into a workshop and office building.
1963 Transfer of shares to Siemens & Halske, Munich (30%) and Bergmann AG, Berlin (70%).



1906 Dr. Siegfried Guggenheimer founded a company under his own name for production and sales of electronic measuring instruments.



September 1919
Founding of P. Gossen & Co. K.-G by 46 year old engineer Paul Gossen.
Purpose of the company:
Manufacture and sale of electrical measuring instruments
Place of business: Baiersdorf, workshop and production plant with 3 employees(Willi Bachmann, Wilhelm Striegel and Andreas Link)
October 1919: 7 employees
October 1920: 28 employees



1948 - 1949 Construction of the "Tippa" factory in Glückstraße (production of the compact "Tippa" typewriter).

1950: 1200 employees

1965 Construction of the new shipping facility. Bergmann AG acquires the remaining 30% of GOSSEN GmbH from S & H.

1966: 2471 employees

1979 Acquisition of Camille Bauer Messinstrumente AG by the Röchling Group, Mannheim.

camille bauer
messinstrumente



111+ YEARS OF EVOLUTION FROM MEASURING TECHNOLOGY PIONEER TO INNOVATION LEADER

1906 - TODAY







1990 The Röchling Group acquires Paul Gossen GmbH from Bergmann EW AG, a holding company of Siemens AG.

GOSSEN 1946 - 1967

GOSSEN 1967 - 1978

1992 Takeover of ABB Metrawatt GmbH by the Röchling Group and rebranding to Metrawatt GmbH.

1993 Merged to Gossen Metrawatt GmbH.

Merger of the companies Gossen and Metrawatt, which belonged to the Röchling Group, to Gossen Metrawatt GmbH. A further Röchling subsidiary, namely Camille Bauer, was also added to the group.

2005 Takeover by new shareholders.

New investment companies laid the foundation for future growth.



DRANETZ

2007 Acquisition of the Global Power Technology Group which consists of Dranetz as a market leader in the field of power quality and power analysis founded in 1962, as well as Electrotek Concepts and Daytronic

PROSyS

2008 Founding of GMC-I PROSyS Ltd.

The new company is a specialist in the development and production of current clamps and Rogowski coils.

SEAWARD

2015 Acquisition of the Seaward Group, manufacturers of electric measuring and test instruments for testing the safety of technical equipment, for testing medical devices and for testing in the field of renewable energy sources.

KURTH ELECTRONIC

2016 Acquisition of Kurth Electronic GmbH, a measuring technology specialist in the field of telecommunications founded in 1977.



2018 Expansion of service capacities.

GMC-I Service GmbH generates additional service capacity by moving to the Grundig site.



2019 Setting of the course for the future.

Relocation of our manufacturing company, MTP Messtechnik Produktions GmbH, to the new premises at the Nuremberg freight port and optimization of the production processes.

2020 Unification of brand and company name.

GMC-I Messtechnik GmbH is transformed into Gossen Metrawatt GmbH. A clear commitment to the GOSSEN METRAWATT brand.

GOSSEN METRAWATT

NEW PRODUCTS



METRACELL BT PRO

Portable battery tester for voltage and resistance measurement

Page 03 - 38 Article No. B100A



METRACABLE TDR PRO

Time domain reflectometer for troubleshooting cables and conductors

Page 03 - 39 Article No. M281A



SECUTEST ST BASE

Test instrument for testing the electrical safety of electrical devices per VDE 0701-0702, IEC 62353, IEC 60974-4, EN50678

Page 04 - 4 Article No. M707A



SECUTEST ST PRO

Test instrument with touchscreen for testing the electrical safety of electrical devices per VDE 0701-0702, IEC 62353, IEC 60974-4, EN 50678

Page 04 - 4 Article No. M707B



SECUTEST ST PRO BT COMFORT

Test instrument with touchscreen and Bluetooth for testing the electrical safety of electrical devices per VDE 0701-0702, IEC 62353, IEC 60974-4

Page 04 - 4 Article No. M707C



SECULIFE ST PRO

Test instrument with antibacterial coating on the housing and touchscreen for testing the electrical safety of electrical devices per IEC 60601, IEC 62353, VDE 0701-0702 and IEC 60974-4, R-PE test current: 10 A.

Page 07 - 2 Article No. M694C



Available as of May/June 2021

METRAHIT IM TECH

Multimeter, milliohmmeter and data logger

Page 01 - 10 Article No. M660C



PQ5000-MOBILE

Portable, programmable 3-phase energy and power disturbance analyzer

Page 02 - 10 Article No. PQ5000-MOBILE



PROFITEST H+E BASE C

Diagnostics unit for testing the functional performance of electric charging stations for electric vehicles

Page 03 - 8 Article No. M525D



PROFITEST H+E BASE 32

Diagnostics unit for testing the functional performance of electric charging stations for electric vehicles, 32 A CEE socket

Page 03 - 8 Article No. M525C



PROFITEST H+E XTRA C

Diagnostics unit for testing the functional performance of DC charging points

Page 03 - 7 Article No. M525M



PROFITEST PV 1500

Test instrument with TFT graphic display for ascertaining characteristic electrical values at PV modules and strings with up to 1500 V

Page 03 - 13 Article No. M360F

NEW PRODUCTS



METRAFUSE FD PRO

Fuse detector for identifying fuses and circuit breakers in electrical installations

Page 03 - 40 | Article No. M660C



METRAVOLT VT 1500

Voltage and continuity tester per DIN EN 61243-3, up to 1000 V AC / 1500 V DC at frequencies up to 2 kHz

Page 03 - 35 | Article No. M630P



METRALINE RLO CHECK

Low-resistance ohmmeter with digital display for testing of line resistances up to 20 Ω in electrical installations

Page 03 - 19 | Article No. M630W



PE RLO-CHECK-PACKAGE

Low-resistance ohmmeter with digital display for testing large protective conductors at lighting systems

Page 03 - 19 | Article No. M630V



LABKON P500-20-25

Programmable power supply with computer interface / output: 0 to 20 V DC / 0 to 25 A / max. 500 W

Page 05 - 7 | Article No. K147A



LABKON P800-20-40

Programmable power supply with computer interface / output: 0 to 20 V DC / 0 to 40 A / max. 800 W

Page 05 - 7 | Article No. K157A



SECULIFE SP BASE

Digital SpO2 simulator with 2.4" color touchscreen

Page 07 - 2 | Article No. M696B

ACCESSORIES



PROFITEST REMOTE

3-phase test adapter for PROFITEST MTECH+ IQ, MXTRA IQ and PRIME.

Page 03 - 25 | Article No. M514R



METRALINE PRO-TYP EM I

Single and 3-phase test adapter with type 2 plug for testing the effectiveness of protective measures at electric charging points with the Profitest Master.

Page 03 - 10 | Article No. Z525F



METRALINE PRO-TYP EM II

Single and 3-phase test adapter with type 2 plug – same as PRO-TYP EM I with additional earthing contact socket for testing with the Profitest Master

Page 03 - 10 | Article No. Z525G



METRALINE PRO-TYP EM III

Single and 3-phase test adapter with type 2 plug – same as PRO-TYP EM II with additional interchangeable test plug for testing with the Profitest Master

Page 03 - 10 | Article No. Z525H

OVERVIEW

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Safe, reliable multimeters for every application

02 **POWER QUALITY**
Improved stability of electrical systems with GOSSEN METRAWAT's power disturbance analyzers

03 **TEST INSTRUMENTS**
Test instruments for testing the electrical safety of electrical equipment and installations

04 **TEST INSTRUMENTS**
Test instruments for testing the electrical safety of electrical devices

05 **LABORATORY POWER SUPPLIES**
Controllable current and voltage sources, as well as electronic loads

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Transferring, displaying, managing and documenting data – GOSSEN METRAWATT's software products

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Overview – measuring and test instruments for medical technology

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Overview – measuring and test technology with optimized scope of functions

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Other catalogs available from the GMC-Instruments group:

INDUSTRIAL TECHNOLOGY



MEDICAL TECHNOLOGY



PHOTO TECHNOLOGY



MULTIMETERS 01

A multimeter is an electronic measuring instrument that combines several measurement functions into a single unit, and is used primarily to measure electrical quantities. To measure means to compare a known quantity with an unknown quantity. The standards of measure of the PTB in Brunswick (German Federal Institute of Physics and Metrology) are used as comparative quantities for our multimeters This is confirmed by means of a DAkkS calibration certificate. Multimeters included in the METRAHIT series are rugged, reliable DMMs with housings made of impact resistant plastic which include unique, patented automatic blocking sockets (ABS). They feature an ultramodern design and are equipped with state-of-the-art technology.

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AM Series

4½ Place TRMS Digital Multimeters for Professional Use with a Resolution of 12,000 Digits



METRAHIT AM BASE
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METRAHIT AM PRO
PAGE 01 - 4



METRAHIT AM TECH
PAGE 01 - 4



METRAHIT AM XTRA
PAGE 01 - 4

PM SERIES

4⅙ Place High-End TRMS Digital Multimeter, System-Compatible with IR Interface – Resolution: 60,000 Digits



METRAHIT PM TECH
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METRAHIT PM XTRA
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METRAHIT PM PRIME
PAGE 01 - 5

S SERIES

Precision TRMS Multimeters, Temperature Measuring Instruments and Data Loggers for Demanding, Universal Applications in the Lab, and for Service Calls



METRAHIT OUTDOOR
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METRAHIT EU PRO
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METRAHIT ENERGY
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METRAHIT T-COM PLUS
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HANDHELD DIGITAL MULTIMETERS

Universal TRMS Digital Multimeters with Analog Scale for Use in All Areas of Electrical Engineering



METRAHIT HIT 2+
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METRAHIT WORLD
PAGE 01 - 8

INSULATION MEASURING INSTRUMENTS AND CABLE MULTIMETERS

Multimeters and Insulation Testers for Service Applications for Measuring and Testing Industrial Trucks, Household Appliances, Telephone Lines and other Applications



METRAHIT ISO
PAGE 01 - 9



METRAHIT ISO@AREO
PAGE 01 - 9



METRAHIT COIL
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MILLIOHMMETERS INSULATION MEASURING INSTRUMENTS

Insulation Resistance Tester, Milliohmmeter, 4¾ Place Multimeter and Data Logger. In addition to a milliohmmeter, an insulation tester has been integrated for measurements up into the giga-ohm range.



METRAHIT IM TECH
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METRAHIT IM XTRA
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METRAHIT IM E-DRIVE
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METRAHIT 27M
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EX MULTIMETERS

Explosion-Proof Digital Multimeters and Milliohmmeters
Thanks to their intrinsically safe design and a rugged housing, they're suitable for use in the mining, chemicals and petro-chemicals industries.



METRAHIT 27EX
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METRALINE EXM25
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FOLDING DIGITAL / ANALOG MULTIMETERS

4¾ Place TRMS Digital Multimeters for Professional Use with a Resolution of 30,000 Digits



METRAport 40S
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METRAport 3A
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HANDHELD DIGITAL / ANALOG MULTIMETERS

Multimeters for Education and Vocational Training, as well as for Use in the Electrical Trades, Industry, Service and Installation



METRAHIT 2A
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METRAmax 2
PAGE 01 - 15

PROCESS CALIBRATOR MULTIMETER / CALIBRATOR

Multifunctional Process Calibrator and Precision TRMS Multimeter for mA, mV, V and Ohm Ranges including Data Logger for Demanding, Universal Use in the Lab, and for Service Calls



METRACAL MC
PAGE 01 - 16



METRAHIT CAL
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DIAGNOSTICS UNIT

Handy, Rugged Addressing and Diagnostics Tool for Initial Start-Up, Maintenance and Service



METRAHIT ASi V3.0
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MULTIMETER ACCESSORIES

Adapters, Chargers, Power Packs, Current Sensors, Current Clamp Sensors, Current Transformers, Probes, Temperature Sensors, Cable Sets, Fuses, Pouches and Cases



CP/HWZ
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Cable Sets
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Pouches / Cases
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METRAHIT AM SERIES

4½ Place TRMS Digital Multimeters with a Resolution of 12,000 Digits



STANDARD for all AM series instruments:

- Resolution: 12,000 digits, 4½ place, TRMS AC, AC+DC function
- 3 connector jacks with patented automatic blocking sockets (ABS)
- Large, illuminated display with character height of 15 mm and quasi-analog display
- Voltage measurement with a basic accuracy of ±0.05% (V_{DC})
- Measuring category: 1000 V CAT III and 600 V CAT IV, IP 52 protection
- Automatic storage of measured values: DATA / MIN / MAX

METRAHIT AM BASE with 12 multimeter functions

Multimeter with high-impedance measuring inputs without direct measurement of current, e.g. for use in the field of energy technology at power utilities

- V (AC, DC, AC+DC), A (AC, DC, AC+DC, with clamp), Ohm, °C, continuity, diode, Hz (V, A)
- Clip factor: 1:1 / 10 / 100 / 1000 for current sensors

METRAHIT AM PRO with 16 multimeter functions, same as METRAHIT BASE + direct measurement of current

Multimeter with low-pass filter and reduced voltage input impedance, e.g. for measurements at frequency converters

- Alternating voltage measurement with reduced input impedance (1 MΩ)
- 1 kHz / -3 dB low-pass filter can be activated

METRAHIT AM TECH with 20 multimeter functions, same as METRAHIT AM PRO + capacitance

Multimeter with optimized current ranges, e.g. for measurements at measuring transducers in the process industry

- Clip factor adjustable for current sensors (V) and transformers (A)
- Current ranges optimized for 4 to 20 mA measuring transducer output

METRAHIT AM XTRA with 23 multimeter functions, same as METRAHIT AM TECH (without clip factor) + Pt100/1000 + duty cycle

System multimeter with data logger, IR interface and power pack socket

- IR interface and integrated measurement data memory for 15,400 measured values
- Power pack connector socket
- Including rubber holster

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- DAkkS calibration certificate
- Set **METRAHIT AM PRO (M242A)**: in HC20 case with WZ12A AC current clamp

Type	Article
METRAHIT AM BASE	M241A
METRAHIT AM PRO	M242A
METRAHIT AM TECH	M243A
METRAHIT AM XTRA	M240A

Function	AM BASE	AM PRO	AM TECH	AM XTRA
Clip function	■	■	■	■
Frequency measurement	100 kHz	100 kHz	100 kHz	1 MHz
Duty cycle	–	–	–	■
Temperature °C / °F	TC (K)	TC (K)	TC (K)	TC (K) / RTD
Power pack connector socket	–	–	–	■
IR interface	–	–	–	■
Data logger	–	–	–	■
VAC with low-pass filter	–	■	■	■
Rubber holster	Optional	Optional	Optional	■
TRMS bandwidth (V_{AC})	1k Hz	10 kHz	10 kHz	20 kHz
TRMS current measurement	–	0.1 mA ... 10 (16) A	1 µA ... 10 (16) A	10 nA ... 10 (16) A
Capacitance measurement	–	–	■	■
Article	**M241A**	**M242A**	**M243A**	**M240A**

METRAHIT PM SERIES

4⅙ Place Digital Multimeters, System-Compatible with IR Interface – Resolution: 60,000 Digits



STANDARD for PM Series

- Resolution: 60,000 digits, 4⅙ place, basic accuracy of ±0.05% (V_{DC})
- 3 connector jacks with patented automatic blocking sockets (ABS), fuse
- DAkkS calibration certificate included
- Large, illuminated display with 15 mm character height
- TRMS AC, AC+DC function
- Auto-ranging – automatic adjustment of the measuring range for optimized resolution
- IR interface for system integration

METRAHIT PM TECH with 23 multimeter functions

- Same applications as AM Tech but with higher resolution and system-compatible thanks to IR interface
- Clip factor adjustable for current sensors (V) and transformers (A)
- Current ranges optimized for 4 to 20 mA measuring transducer output
- Measuring category: 1000 V CAT III and 600 V CAT IV, IP 52 protection

METRAHIT PM XTRA with 26 multimeter functions, same as METRAHIT PM TECH + Pt100/1000 + duty cycle

Same as AM XTRA with larger data memory, higher resolution and V_{AC} bandwidth up to 100 kHz

- IR interface and integrated measurement data memory for 61,600 measured values
- Measuring category: 1000 V CAT III and 600 V CAT IV, IP 52 protection
- Power pack connector socket

METRAHIT PM PRIME – Optionally with Bluetooth® und App

- TRMS measurement with, amongst others: VAC TRMS, VAC+DC TRMS, VDC, AAC TRMS, AAC+DC TRMS, ADC dB, Hz(V), Hz(A), V, °C / °F (TC/RTD)
- Resolution of 31,000 digits, triple display, display illumination can be activated under difficult lighting conditions – basic accuracy of 0.02%
- Measurement data memory for up to 300,000 measured values
- Instrument can be remote controlled via Bluetooth® interface (device variant **M248B** only)
- TRMS bandwidth: 100 kHz
- CAT III 600 V / CAT IV 300 V
- 1 kHz / -3 dB low-pass filter can be activated
- Auto-ranging – automatic adjustment of the measuring range for optimized resolution
- Patented, automatic storage of measured values after settling in
- IR interface – remote controllable without activating the rotary switch
- Optionally with integrated Bluetooth® interface

FREEWARE

App for smartphones or tablets with Android™ for the Bluetooth® variant

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- DAkkS calibration certificate
- Rubber holster
- HC20 hard case (PM TECH, PM XTRA)

Type	Article
METRAHIT PM TECH	M253A
METRAHIT PM XTRA	M250A
METRAHIT PM PRIME	M248A
METRAHIT PM PRIME BT	M248B

Function	PM TECH	PM XTRA	PM PRIME	PM PRIME BT
Clip function	■	■	■	■
Frequency measurement	300 kHz	1 MHz	1 MHz	1 MHz
Duty cycle	–	■	■	■
Temperature °C / °F	TC (K) / RTD	TC (K) / RTD	TC (K) / RTD	TC (K) / RTD
Power pack connector socket	–	■	■	■
IR interface	■	■	■	■
Bluetooth	–	–	–	■
Data logger	–	■	■	■
VAC with low-pass filter	–	■	■	■
Rubber holster	■	■	■	■
TRMS bandwidth (V_{AC})	20 kHz	100 kHz	100 kHz	100 kHz
TRMS current measurement	1 µA ... 10 (16) A	10 nA ... 10 (16) A	1 nA ... 10 A (16 A)	1 nA ... 10 A (16 A)
Capacitance measurement	■	■	■	■
Article	**M253A**	**M250A**	**M248A**	**M248B**

METRAHIT OUTDOOR

OUTDOOR Multimeter



The OUTDOOR multimeter has been specially designed and manufactured to meet the challenges faced by engineers and technicians in adverse environments.

It's extremely rugged, impact-resistant, water-proof and dust-proof, and it's resistant to extreme temperatures.

Technology and scope of functions are the same as with the **METRAHIT PM XTRA**.

FEATURES:

- Special rugged design with shock and impact resistant housing
- Additional rubber holster
- Special "sand" color
- IP 65: dust-proof / water jets
- Patented, sealed blocking sockets
- Plus additional functions as included with the **METRAHIT PM XTRA**

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Rubber holster
- Two 1.5 V AA batteries
- DAkkS calibration certificate

Type	Article
METRAHIT OUTDOOR	M2400

METRAHIT EU PRO

Special Multimeter with Direct Current Measurement



Special multimeter for connection to current transformers without fuses, in order to eliminate danger resulting from interruption of the transformer circuits (and thus measuring category 600 V CAT II)

FEATURES:

- Includes 21 multimeter functions, see standard under PM series
- Direct current measurement
- Clip factor adjustable for current sensors (V) and transformers (A)
- Alternating voltage measurement with reduced input impedance (low impedance, 1 MΩ)
- 1 kHz / -3 dB low-pass filter can be activated

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- DAkkS calibration certificate
- Rubber holster
- HC20 hard case

Type	Article
METRAHIT EU PRO	M252A

METRAHIT ENERGY

Power Multimeter and Power Quality Analyzer



Multimeter with power and energy measurement, e.g. for ascertaining energy consumption during operation and in standby mode, for consumer electronics, communications and IT devices, as well as household appliances such as refrigerators etc., plus a single-phase mains analyzer (power quality tool) for testing power quality.

FEATURES:

- Resolution: 60,000 digits, $4^6/_7$ place, basic accuracy of ±0.05% (V_{DC})
- V_{AC}, $_{AC+DC}$ TRMS (100 kHz), V_{DC}, A_{AC}, $_{AC+DC}$ TRMS, A_{DC}, dB, Hz (V), Hz (A), Ω, µF, diode, °C / °F (TC/RTD)
- Current: direct from 10 nA to10 (16) A, as well as via current clamp transformers and sensors with clip factor
- Power measurement (W, VAr, VA, PF): active, reactive and apparent power with extreme values
- Energy measurement (Wh, VArh, VAh): active, reactive and apparent energy, mean power value with adjustable time period and associated maximum values
- Power quality analysis: detection of over and undervoltage (> 0.5 s), dips/swells (> 10 ms), voltage peaks (> 0.5 s) and transients (> 5 µs), and recording of these values with timestamp and details in 0, 50 and 60 Hz systems
- Harmonic analysis: RMS values and distortion components up to the 15th harmonic
- Crest factor (CF), conductivity (nS), low impedance (RSL), duty cycle (%), cable length (km)
- 1 kHz / -3 dB low-pass filter can be activated for voltage measurements at the frequency converter output
- Data storage for up to 300,000 measured values in the integrated memory module
- IR interface – remote controllable without activating the rotary switch

SCOPE OF DELIVERY:

- Multimeter
- KS29 measurement cable set
- Rubber holster
- Two 1.5 V AA batteries
- DAkkS calibration certificate

ADDITIONALLY INCLUDED WITH THE DC POWER SET (M249D):

- 1 CP1800 current sensor
- 1 SR9800 measuring shunt
- 1 HC30 hard case

Type	Article
METRAHIT ENERGY	M249A
METRAHIT ENERGY DC POWER SET	M249D

METRAHIT T-COM PLUS

3¾ Place Cable Multimeter



3¾ place cable multimeter for symmetrical copper cable in telecommunications networks. System instrument with data storage, IR interface and 25 multimeter functions

FEATURES:

- $V_{AC, AC}$+DC TRMS (10 kHz), V_{DC}, A_{AC}, $_{AC+DC}$ TRMS, A_{DC}, Hz, Ω, µF, diode/continuity, °C / °F (Pt100/Pt1000), 200 Hz filter @ V_{AC}
- Insulation resistance measurement with 100 V test voltage
- Detection of interference voltage, error detection and reversible polarity
- Cable symmetry testing by means of rapid terminal switching: a – b – E
- Measurement of cable length with adjustable cable parameters
- Low-resistance measurement (cable loops) RSL with 2 mA test current
- Insulation resistance measurement with 10 and 100 V test voltages
- Interference-resistant capacitance measurement
- Suppression of handshake signals with optional SM100 signature measuring adapter

SCOPE OF DELIVERY:

- Multimeter
- KS21-T measurement cable set
- Two 1.5 V AA batteries
- DAkkS calibration certificate

Type	Article
METRAHIT T-COM PLUS	M246S

METRAHIT 2+

TRMS Digital Multimeter



$3^{6}/_{7}$ place TRMS digital multimeter with analog scale for use in all areas of electrical engineering

FEATURES:

- V (AC, DC), A (AC, DC), Ohm, °C, continuity, diode, Hz
- Direct measurement of current: 10 µA to 10 (16) A
- Resolution: 60,000 digits, basic accuracy of ±0.5% (V_{DC})
- 4 connector jacks with patented automatic blocking sockets (ABS), fuse
- Automatic or manual measuring range selection, automatic storage of measured values: DATA / MIN / MAX
- Measuring category: 600 V CAT III

SCOPE OF DELIVERY:

- Multimeter
- KS17-ONE measurement cable set
- Two 1.5 V AA batteries
- Rubber holster
- DAkkS calibration certificate

Type	Article
METRAHIT 2+	M205A

METRAHIT WORLD

Universal TRMS Digital Multimeter with IR Interface



$3^{6}/_{7}$ place universal TRMS digital multimeter with analog scale for use in all areas of electrical engineering, especially at the international level

FEATURES:

- V (AC, DC), A (AC, DC) to 10 (16) A, Ohm, °C, continuity, diode, Hz, µF, speed, duty cycle
- Resolution: 60,000 digits, basic accuracy of ±0.5% (V_{DC})
- 4 connector jacks with patented automatic blocking sockets (ABS), fuse
- Automatic or manual measuring range selection, automatic storage of measured values: DATA / MIN / MAX
- IR interface
- Measuring category: 1000 V CAT III, 600 V CAT IV

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- Rubber holster and DAkkS calibration certificate

Type	Article
METRAHIT WORLD	M206A

METRAHIT ISO

4¾ Place Multimeter and Insulation Tester



4¾ place multimeter and insulation tester for service applications for measuring and testing industrial trucks, household appliances and other applications – resolution: 30,000 digits – 26 multimeter functions

FEATURES:

- V_{AC}, $_{AC+DC}$ TRMS (10 kHz), V_{DC}, A_{AC}, $_{AC+DC}$ TRMS, A_{DC}, dB, Hz, Ω, µF, diode, °C / °F (TC/RTD)
- Direct measurement of current: 100 nA to 10 A, as well as via current clamp sensors with clip factor
- Selectable low-pass filter, 1 kHz/–3 dB in the V_{AC} range
- Insulation resistance measurement with adjustable test voltage (50, 100, 250, 500, 1000 V) and detection of interference voltage – up to 3 GΩ
- Data logger for up to 15,400 measured values
- IR interface – remote controllable without activating the rotary switch

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- DAkkS calibration certificate

Type	Article
METRAHIT ISO	M246B

METRAHIT ISO@AERO / MASTER TEST KIT

Special Version for Avionics Services



Special version for avionics services with special low-voltage insulation measurement and data hold function. Ω ISO test voltages:10, 50, 100, 250, 500 V

Avionics service case with special test and measuring accessories for aviation technology consisting of measurement cables, terminals, adapters and sockets for MIL plug connectors in a waterproof, pressure-tight hard case.

SCOPE OF DELIVERY FOR ISO@AERO (M246M) same as METRAHIT ISO:

- Plus power pack with broad range input: 90 to 250 V, 50/60 Hz

SCOPE OF DELIVERY FOR AERO MASTER TEST KIT I (Z246A):

- Avionics service case with 68-piece set of special test and measuring accessories for aviation technology

INCLUDED WITH AERO MASTER TEST KIT II (M246N):

- Avionics service case plus METRAHIT ISO@AERO

Type	Article
METRAHIT ISO@AERO	M246M
Aero MasterTest Kit I	Z246A
Aero MasterTest Kit II	M246N

METRAHIT COIL

4¾ Place Motor Winding and Insulation Tester



METRAHIT COIL



Coil Test Adapter

4¾ place multimeter, insulation and motor coil tester for service applications for measuring and testing electric machines such as industrial trucks and other applications with asynchronous motors – resolution: 30,000 digits – 28 multimeter functions

- Inter-turn short circuit detection with1000 V test voltage for electric machines
- Automatic bar graph display of motor coil scatter as a percentage
- Insulation resistance measurement up to 3 GΩ with selectable test voltages of 50, 100, 250, 500 or 1000 V and detection of interference voltage
- $V_{AC,\ AC+DC}$ TRMS (10 kHz), V_{AC} @ 1MΩ, 1 kHz low-pass @ V_{AC}, V_{DC}, $A_{AC,\ AC+DC}$ TRMS, A_{DC}, dB, Hz, duty cycle (%), Ω, µF, diode, °C / °F (TC/RTD)
- Duty cycle as percentage up to 30 V (U_{max}: 1 kV – not specified)
- Direct measurement of current:100 nA ...10 A, as well as via current clamp sensors with clip factor
- Data logger for up to 15,400 measured values
- IR interface

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set and two 1.5 V AA batteries
- Coil test adapter
- DAkkS calibration certificate

Type	Article
METRAHIT COIL	M246C

METRAHIT IM SERIES

Multimeters for Maintenance, Service and Diagnosis



Multimeters included in the METRAHIT IM series are portable, extremely rugged instruments designed for use in the field. These robust handheld multimeters offer a globally unique range of functions with a compact design.

Isolation tester (IM XTRA and E-DRIVE), milliohmmeter, inter-turn short circuit tester (IM XTRA and E-DRIVE) and universal multimeter. They're ideal for safety testing and diagnosis at electric and hybrid vehicles, as well as all types of electric machines.

The multimeters are also used in a wide variety of laboratory, testing and development applications.

The multimeters are suitable for maintenance, service and diagnosis of electric machines, drive units and systems in automotive, energy and automation applications, for electromobility (IM E-DRIVE) and in the field of aviation. Compact and multifunctional for use in the field: can be used advantageously in aircraft cockpits as well as in other constricted spaces, which would otherwise require the use of several individual instruments.

In combination with the optional COIL ADAPTER XTRA (IM XTRA and E-DRIVE), inter-turn short circuit testing is possible with 1000 V surge voltage within an inductance range of 10 µH to 5 H.

MULTIFUNCTIONAL

- Insulation test with 50 to 1000 V
- Equipotential bonding test with 4-wire measuring technology
- Coil test with 1 kV
- High-end multimeter with 100 kHz TRMS

UNIVERSAL INTERFACES

- Easy data exchange via Bluetooth, or optionally via USB

QUICK-CHANGE RECHARGEABLE BATTERY

- Excellent availability

ABS – AUTOMATIC BLOCKING SOCKETS

- Incorrect socket allocation is ruled out
- Patented safety function

INCLUDING SOFTWARE LICENSE

- for IZYTRONIQ Business Starter

DAkkS CALIBRATION CERTIFICATE

- Traceability to national standards
- In-house GMC-I calibration center

COLOR GRAPHIC DISPLAY

- Brilliant colors with high resolution
- Suitable for use in daylight with ambient light sensor

HIGH-VOLTAGE TEST

- Safety test in accordance with UNECE R100

RUGGED HOUSING

- Suitable for use in the field in numerous applications

PROBE WITH START, STOP AND STORE

- Ergonomic operation

SOFTKEYS AND ROTARY SWITCH WITH SUB-FUNCTIONS

- Quick access to measuring and test functions

METRAHIT IM-TECH



Metrahit IM TECH

The METRAHIT IM TECH is a milliohmmeter and universal multimeter with data logger.

Applications include on-site-service, use in the laboratory, research and development, testing and special applications in industry and aviation.

FEATURES:

- 4-wire milliohm measurement, 200 mA / 1A
- TRMS AC / AC+DC measurement for current/ voltage up to 10/100 kHz
- Direct current measurement, 10 nA to 1 A
- Current measurement with clamp sensors – transformation ratio can be adjusted with CLIP from 1:1 to 1:1000
- Multimeter (V, A, Ω, F, Hz, %, RPM, °C/°F)
- Data reader and sequence manager (download)
- Logging of min. and max. values, DATA Hold
- IZYTRONIQ test management software

SCOPE OF DELIVERY

- Multimeter
- KS17-2 cable set with safety measurement cables, red/black, 4 mm
- 2 KC4 Kelvin clips
- Quick-change, rechargeable lithium polymer battery with micro USB charging socket
- USB power pack with cable, USB to micro USB
- DAkkS calibration certificate
- Rubber holster
- Hard case for multimeter and accessories
- Condensed operating instructions (German/English)
- IZYTRONIQ Business Starter license

Type	Article
METRAHIT IM TECH BT	M272S

METRAHIT IM-XTRA



Metrahit IM XTRA

reddot award 2018
winner industrial design

The METRAHIT IM XTRA multimeter is an all-in-one instrument: insulation tester, milliohmmeter, inter-turn short circuit tester and universal multimeter.

It's ideal for safety testing and diagnostics at electric machines, drives and motors.

FEATURES:

- **4-wire milliohm measurement, 200 mA / 1A**
- 2-wire Rlo measurement per DIN EN 61557-4
- Inter-turn short circuit test with 1000 V surge voltage and optional COIL adapter
- **Insulation resistance measurement** up to 3.1 GΩ
- TRMS AC / AC+DC measurement for current/ voltage up to 10/100 kHz
- Direct current measurement, 10 nA to 1 A
- Data reader and sequence manager (download)
- Logging of min. and max. values, DATA Hold
- IZYTRONIQ test management software

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 cable set with safety measurement cables, red/black, 4 mm
- 2 KC4 Kelvin clips
- Quick-change, rechargeable lithium polymer battery with micro USB charging socket
- USB power pack with cable, USB to micro USB
- DAkkS calibration certificate
- Rubber holster
- Hard case for multimeter and accessories
- Condensed operating instructions (German/English)
- IZYTRONIQ Business Starter license

Type	Article
METRAHIT IM XTRA BT	M273S

METRAHIT IM E-DRIVE



Metrahit IM XTRA

The METRAHIT IM E-DRIVE multimeter is an all-in-one instrument: insulation tester, milliohmmeter, inter-turn short circuit tester and universal multimeter.

It's ideal for safety testing and diagnostics at electric and hybrid vehicles with corresponding high-voltage technology.

FEATURES:

- **Testing in accordance with UNECE R100**
- 4-wire milliohm measurement, 200 mA / 1A
- 2-wire Rlo measurement per DIN EN 61557-4
- Inter-turn short circuit test with 1000 V surge voltage and optional COIL adapter
- Insulation resistance measurement up to 3.1 GΩ
- TRMS AC / AC+DC measurement for current/ voltage up to 10/100 kHz
- Direct current measurement, 10 nA to 1 A
- Data reader and sequence manager (download)
- Logging of min. and max. values, DATA Hold
- IZYTRONIQ test management software

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 cable set with safety measurement cables, red/black, 4 mm
- 1 KC4 Kelvin clip
- 1 KC27 Kelvin probe
- Quick-change, rechargeable lithium polymer battery with micro USB charging socket
- USB power pack with cable, USB to micro USB
- DAkkS calibration certificate
- Rubber holster
- Hard case for multimeter and accessories
- Condensed operating instructions (German/English)
- IZYTRONIQ Business Starter license

Type	Article
METRAHIT IM E-DRIVE BT	M274S

COIL ADAPTER XTRA



In combination with the optional COIL TEST ADAPTER, the METRAHIT IM XTRA and the METRAHIT IM E-DRIVE make it possible to test coils in electric motors and generators for inter-turn short-circuits. The Z270M adapter is universally suitable for many electric machines with various power ratings. For motors in accordance with DIN standards, this corresponds to power ratings of roughly 160 VA to 80 MVA.

FEATURES:

- Simultaneous connection to 3 coils
- Rotary switch for coil selection
- Polarity reversal via the rotary switch
- 2 inductance ranges: 10 micro H ... 50 mH / 5 mH ... 5 H
- Combined connector plug
- Automatic indication of rotary switch position
- Graphic representation of measurement results

Type	Article
COIL ADAPTER XTRA	Z270M

METRAHIT 27M

4¾ Place Milliohmmeter and Multimeter with Data Logger



Milliohmmeter, 4¾ place multimeter and data logger, temperature measuring instrument for on-site service and laboratory work:

Low impedance and milliohm measurements, e.g. contact resistance at welding seams and rivets, wick test on aircraft outer skins, equipotential bonding, contacts etc.

FEATURES:

- Resolution: 30,000 digits
- 4-wire measurement (Kelvin connection) in the following measuring ranges: 3.000 / 30.000 / 300.00 mΩ @ 1A (pulsed), 30.00 / 300.00 mΩ @ 200 mA, 3.0000 / 30.000 Ω @ 20 mA
- IR interface
- Multimeter functions: 3.0000 … 600.0 $V_{AC,DC}$, 300.00 Hz … 3.0000 kHz, 300.0 Ω ... 30.000 MΩ, 30.00 … 3000 MΩ, diode (3 V) / continuity, -200.0 … +600.0 °C (F) (RTD)
- DATA hold memory for up to 1200 measured values
- Measuring category: 600 V CAT II, IP 54 protection

SCOPE OF DELIVERY:

- Multimeter
- KS17-S measurement cable set
- Rubber holster with carrying strap
- 3 rechargeable NiMH batteries
- DAkkS calibration certificate

Type	Article
METRAHIT 27M	M227A

METRAHIT 27EX

4¾ Place Milliohmmeter for Potentially Explosive Atmospheres





4¾ place milliohmmeter for potentially explosive atmospheres – for measuring low-value contact resistance in explosive atmospheres, e.g. at contacts inside aircraft fuel tanks (bonding test), as well as for general low-value resistance measurements inside and outside of potentially explosive atmospheres, for example on aircraft outer skins (lightning protection and wick test)

FEATURES:

- Measuring ranges: 30 mΩ, 300 mΩ, 3 Ω, 30 Ω
- Resolution: 10 µΩ
- DATA Hold memory: 1200 measured values
- Prototype test certificate: INERIS 05ATEX0040
- EX designation: Ex II 2 G EEx ia IIA T4
- IR interface
- Measuring category: 50 V CAT I
- IP 54 protection

SCOPE OF DELIVERY:

- Multimeter
- 4+4 batteries, Ex approved
- KC27 Kelvin probe (1 piece)
- KC4 Kelvin clip (1 piece)
- HC30 hard case
- DAkkS calibration certificate
- Ex certificate INERIS 05ATEX0040/02

SPECIAL VARIANT FOR AIRBUS (M227G):

- With AIRBUS logo, ID no. 97F92003500000 Airbus Aircraft Maintenance Manual (AMM)

Type	Article
METRAHIT 27EX	M227F
METRAHIT 27EX AIRBUS	M227G

METRALINE EXM 25

Digital Multimeter for Potentially Explosive Atmospheres



FEATURES:

- Voltage: AC 0.01 ... 1160 V (TRMS to 500 Hz), DC 0.001 ... 1610 V
- Resistance: 0.1 Ω .... 20 MΩ
- Current: 1 mA ... 2 A
- Frequency: 0.1 Hz ... 10 kHz
- Approved in accordance with ATEX directive 94/9 EC for intrinsically safe and non-intrinsically safe circuits with up to 1000 V
- Maximum safety thanks to encapsulated protective resistors in DATA hold test probes, 1000 V CAT IV
- Intrinsically safe battery packs, rechargeable NiMH battery or Li battery
- Ex II 2G Ex ib IIC T4/T6 (petrochemicals)
- Ex I M2 Ex ib I (coal mining)

SCOPE OF DELIVERY:

- Multimeter
- 1 set of DATA Hold test probes, CAT IV 1 kV
- 1 set of standard test probes for Ω/A
- 1 EXM-LB3 lithium battery
- 1 set of operating instructions

Type	Article
METRALINE EXM25B	M210B
EXM-LED leather case	Z209L
EXM-LB3 lithium battery	Z209B

METRAport 40S

4¾ Place Folding TRMS Digital Multimeter



4¾ place folding digital multimeter for universal use in general electrical and electronics applications, as well as for automotive service

FEATURES:

- Ideal reading angle adjustment is made possible by the tilt stand, and when suspended from the neck strap both hands are free for performing measurements.
- The instrument is switched off automatically when folded closed, and the display and the control panel are protected against damage.
- User-friendly thanks to resettable auto-fuses for the current measuring ranges
- V (AC, DC), A (AC, DC) up to 10 A, Ohm, continuity, diode, Hz (V, A), µF, °C (TC/RTD), speed, duty cycle
- Direct measurement of current and with current clamp sensors, adjustable clip factor
- Resolution: 30,000 digits, basic accuracy of ±0.2% (V_{DC}), 10 kHz TRMS
- Automatic or manual measuring range selection, Automatic storage of measured values: DATA / MIN / MAX
- Measuring category: 300 V CAT II
- USB port
- DAkkS calibration certificate

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- Carrying strap
- DAkkS calibration certificate

Type	Article
METRAport 40S	M234D

METRAport 3A

Folding Analog Multimeter



Folding analog multimeter for demanding applications with analog display and 46 measuring ranges for universal use in process engineering, electronics and electrical applications, testing, R&D, service and training in accordance with EN 61010-1

FEATURES:

- For measurement of voltage, current, resistance and level
- With reflective scale
- High input resistance of 10 MΩ for no-load voltage measurement
- Automatic battery cutoff when instrument is folded closed
- Overload protection in all ranges: 250 V~ (except for 10 A range)
- 9 voltage measuring ranges from 100 mV to 600 V
- 9 level measuring ranges
- 7 current measuring ranges: 10 mA ... 10 A
- 5 resistance measuring ranges: 1 Ω ... 20 MΩ
- Scale can be tilted with folding lid which also provides protection during transport
- Measuring category: 300 V CAT III, 600 V CAT II
- Accuracy per IEC/EN 60051, class 2.5 (AC) 1.5 (DC, Ω)

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- 9 V flat cell battery per IEC 6LR61
- Carrying strap

Type	Article
METRAport 3A	M113A

METRAHIT 2A

Analog Multimeter



Compact, basic analog multimeter for training and hobby, and for electrical applications

FEATURES:

- Dimensions (W x H x D): 92 x 126 x 45 mm
- Weight: approx. 0.25 kg without battery
- Battery: 1.5 V IEC LR 6 (AA)
- Manufacturer's guarantee: 1 year material and workmanship
- Measuring category: 500 V CAT II
- Accuracy per IEC/EN 60051, class 2.5 (AC, DC)
- Voltage measurement from 0 to 0.15 / 0 ... 0.5 V= 0 ... 1.5 / 5 / 15 / 50 / 150 / 500 V= / ~
- Current measurement: 0 ... 50 mA=, 1 A: 0 ... 0.5 / 5 / 50 / 500 mA / 5 A= / ~ 1A: 0 ... 1.5 / 15 / 150 mA / 1.5 / 15 A= / ~
- Resistance measurement: 1 Ω ... 1 MΩ
- Level: -15 ... +56 dB

SCOPE OF DELIVERY:

- Multimeter
- 9 V flat cell battery per IEC 6LR61

Type	Article
METRAHIT 2A	M101A

METRAmax 2

Analog Multimeter



The analog multimeter was developed in cooperation with a renowned German training systems manufacturer and fulfills requirements for instruction and vocational education. It's suitable for balancing, and for inspection work as well.

FEATURES:

- Voltage measurement: 100 mV ... 300 V
- Current measurement: 100 mA ... 3 A
- Zero point can be set to left or center
- Outstanding overload capacity
- Automatic battery cutoff
- Dimensions (W x H x D): 100 x 140 x 35 mm
- Weight: approx. 0.3 kg with battery
- Measuring category: 300 V CAT II
- Accuracy per IEC/EN 60051, class 3 (AC) 3 (DC)

SCOPE OF DELIVERY:

- Multimeter
- One 9 V flat cell battery, IEC 6 LR 61 (6 F 22)

Type	Article
METRAmax 2	M102A

METRACAL MC

Multifunctional Process Calibrator and Multimeter





Display illumination and multiple display, e.g. functions and output value or measurement and simulation values etc.



Separate battery and fuse compartments



Connection for external power pack and continuous, battery-free power supply

Calibration and Measurement: Efficient and Time-Saving thanks to Simulation

The extremely cost-effective **METRACAL MC** multi-functional process calibrator is distinguished by its durability, easy handling, outstanding functionality, accuracy and compatibility with PC systems.

The **METRACAL MC** streamlines measuring, calibration and inspection work for chemical processes, in the lab and in R&D, for the production of electronic measuring transducers and when balancing and calibrating metrology components.

The integrated multimeter and calibrator make it possible for measuring technicians to simulate sensor conditions at the inputs of transducers, transmitters and buffer amplifiers, and at the same time to accurately measure the electrically isolated signal output, and to save results to memory on-site.

The instrument is equipped with a bidirectional infrared interface for subsequent documentation of test results at a PC, and for the transmission of stored measured values.

The measuring, simulation and calibration functions are very comprehensive and include current (mA), voltage (mV, V), resistance (0 to 2000 Ω), pulse amplitude and frequency (Hz), as well as temperature measurement and simulation of resistance temperature detectors (Pt100, Pt1000, Ni100, Ni1000) and thermocouples (J, K, T, L, R, B, S, E, U, N), which can be displayed as desired in °C or °F.

The calibration and measuring functions can be scaled as electrical quantities, or as percentage values of an adjustable measuring span.

FEATURES:

- Universal calibrator, simulator and multimeter, mA / mV ... V / °C (Pt100 / 1000, Ni100 / 1000, thermocouples J, L, T, U, K, E, S, R, B, N / 30 ... 2000 Ω
- Precision multimeter (V, A, Ω, F, Hz, °C/°F), display: 30,000 (60,000) digits and triple display, basic accuracy of ±0.05% (V_{DC})
- Automatic or manual measuring range selection, automatic storage of measured values: DATA / MIN / MAX
- IR interface
- Dual mode – simultaneous calibration and measurement (U / I)
- TRMS AC measurement to 20 kHz
- Measurement and simulation in absolute terms and as percentages (scaled)
- Memory for measurement results: 16 Mbit / 46,000 measured values
- Frequency and pulse run generators: 1 Hz ... 2 kHz
- Ramp and staircase functions
- METRAwin® 90-2 calibration software (optional), METRAwin10 / METRAHIT multimeter software (optional)
- Transmitter simulator (sink: 0 ... 24 mA)
- DAkkS calibration certificate included
- Rugged, EMC compliant design
- Measuring category: 300 V CAT II
- IP 65 protection
- Power pack connector jack

SCOPE OF DELIVERY:

- Multimeter
- KS29 measurement cable set
- Rubber holster with carrying strap
- Two 1.5 V AA batteries
- DAkkS calibration certificate

Type	Article
METRACAL MC	M245A

METRAHIT CAL / CAL PACK

Multifunctional Calibrator





Multifunctional calibrator for process engineering – 18 calibrator functions. The calibrator can be used for generating and simulating a broad range of electronic quantities, and also covers 10 different thermocouples and 4 resistance temperature sensors. Its outstanding accuracy and rugged design make the METRAHIT CAL a high performance tool for use in the workshop and the lab.

FEATURES:

- Simulation function for voltage, resistance and frequency
- Source and sink functions for current, in particular for process quantities, e.g. 0 ... 20 mA
- Temperature simulation for resistance thermometers and thermocouples
- Values can be set easily with the help of function keys and the cursor field
- Interval and ramp functions
- Infrared interface for data exchange and parameters configuration at a PC (IR-USB adapter and software available as option)
- Battery operation anywhere with additional power pack socket for continuous operation
- Measuring category: 250 V CAT I
- IP 54 protection
- Optional software: METRAwin 90-2 and METRAwin 10 (parameters configuring and analysis software for multimeters)

SCOPE OF DELIVERY:

- Multimeter
- KS17-2 measurement cable set
- Rubber holster with carrying strap
- Two 1.5 V AA batteries
- DAkkS calibration certificate

INCLUDED WITH THE METRAHIT CAL PACK:

- Handheld calibrator with rubber holster
- METRAHIT AM X-TRA with rubber holster
- Measurement cable sets and batteries
- HC30 hard case
- DAkkS calibration certificate

Type	Article
METRAHIT CAL	M244A
METRAHIT CAL PACK	M244B

METRAHIT ASi V3.0

Addressing and Diagnostics Tool



The handy, rugged addressing and diagnostics tool for initial start-up, maintenance and service of ASi systems offers the following functions:

Addressing functions

- Read-out and selection of slave addresses 0 to 31, 1A to 31A or 1B to 31B for all AS interface slaves
- Selection of slave parameters for test purposes and read-back of the parameter echo
- Read-out of the slave profile (IO, ID, ID2)
- Read-out and setting of the ID1 code
- Read-out of data objects, identifiers and diagnostics in the case of CTT2 slaves
- Read-out of the safety code sequences of safety relevant input slaves (ASIsafe)
- Reading and writing of the cyclical input and output channels of CTT2 slaves
- Storage of complete network configurations (profiles of all slaves) as an addressing aide

Diagnosis functions

- Testing of input and output data from digital and analog slaves in accordance with AS interface specification V3.0, including safety relevant input slaves, detection of incorrect polarity and overloading
- Measurement of voltage in the AS interface conductor and measurement of operating current for AS-i slaves
- Fault detection with comments
- Display of peripheral faults

SCOPE OF DELIVERY:

- Multimeter
- Rubber holster with carrying strap
- Connector cable, M12 to barrel plug **(Z236A)**
- 4 batteries per IEC LR6
- Condensed operating instructions

Type	Article
METRAHIT ASi V3.0	M235J
ASi module base	Z231G
HC20	Z113A

METRAHIT	AM BASE	AM PRO	AM TECH	PM TECH	AM X-TRA
					
DC voltage measuring ranges	100.00 mV ... 1000.0 V	100.00 mV ... 1000.0 V	100.00 mV ... 1000.0 V	600.00 mV ... 1000.0 V	100.00 mV /// 1000.0 V
Intrinsic error for V DC	±0.05% rdg. +3 d	±0.05% rdg. +3 d	±0.05% rdg. +3 d		±0.05% rdg. +3 d
AC voltage measuring ranges	100.00 mV ... 1000.0 V	100.00 mV ... 1000.0 V	100.00 mV ... 1000.0 V	600.00 mV ... 1000.0 V	100.00 mV /// 1000.0 V
Intrinsic error for V AC	±0.5% rdg. +9 d	±0.5% rdg. +9 d	±0.5% rdg. +9 d		±0.5% rdg. +9 d
TRMS V	AC, AC+DC	AC, AC+DC	AC, AC+DC		AC, AC+DC
DC current measuring ranges	Option: current clamp sensor	1.0000 A / 10.000 A	10.000 mA / 10.000 A	60.000 mA / 10.000 A	100.00 µA /// 10.000 A
Intrinsic error, A DC	–	±0.9% rdg. +5 d	±0.5% rdg. +5 d		±0.5% rdg. +5 d
AC current measuring ranges	Option: current clamp sensor	1.0000 A / 10.000 A	10.000 mA / 10.000 A	60.000 mA / 10.000 A	100.00 µA /// 10.000 A
Intrinsic error, A AC	–	±1.5% rdg. +30 d	±1.5% rdg. +30 d		±1.5% rdg. +30 d
TRMS A	AC, AC+DC	AC, AC+DC	AC, AC+DC		AC, AC+DC
Resistance measuring ranges	100.00 Ω / 40.00 MΩ	100.00 Ω / 40.00 MΩ	100.00 Ω / 40.00 MΩ	600.00 Ω / 60.00 MΩ	100.00 Ω /// 40.00 MΩ
Intrinsic error, resistance	±0.2% rdg. +5 d	±0.2% rdg. +5 d	±0.2% rdg. +5 d		±0.2% rdg. +5 d
4-wire milliohm measurement	–	–	–		–
Power and energy measurement	–	–	–		–
Power quality (PQ)	–	–	–		–
Capacitance measuring ranges	–	–	10.00 nF / 1000 µF	60.00 nF / 600.0 µF	10.00 nF /// 1000 µF
Intrinsic error, capacitance	–	–	±1% rdg. +6 d		±1% rdg. +6 d
Cable length measurement	–	–	–		–
Temp. measurement, Pt100/1000	–	–	–	- 200 °C ... +850 °C	-200 °C ... +850 °C
Temperature measurement TC	-250 °C ... +1372 °C (K)	-250 °C ... +1372 °C (K)	-250 °C ... +1372 °C (K)		-250 °C... +1372 °C (K)
Continuity test	■	■	■		■
Diode test	5.1 V	5.1 V	5.1 V		5.1 V
Frequency measuring ranges	100.00 Hz / 100.00 kHz	100.00 Hz / 100.00 kHz	100.00 Hz / 100.00 kHz	600.00 Hz / 300.00 kHz	100.00 Hz /// 1.0000 MHz
Duty cycle	–	–	–	–	■
Level measurement (dB)	–	–	–	■	–
DATA / MIN-MAX storage	■	–	■		■
Data storage (measured values)	–	–	–		540 kB (15,400)
Analog display, 35/36 scale divisions	■	■	■	■	■
Digital display (places/digits)	4½ = 12,000 d	4½ = 12,000 d	4½ = 12,000 d	$4^{6}/_{7}$ = 60,000 d	4½ = 12,000 d
Display illumination	■	■	■		■
Measurements per second	40 analog / 10 digital	40 analog / 10 digital	40 analog / 10 digital		40 analog / 10 digital
V AC/V AC+DC bandwidth	1 kHz	10 kHz	10 kHz	20 kHz	20 kHz
Interface / suitable adapter	–	–	–	IR / USB X-TRA	IR / USB X-TRA
Automatic blocking sockets	■	■	■		■
Measuring category	CAT III / 1000 V CAT IV / 600 V	CAT III / 1000 V CAT IV / 600 V	CAT III / 1000 V CAT IV / 600 V		CAT III / 1000 V CAT IV / 600 V
Calibration certificate	DAkkS	DAkkS	DAkkS		DAkkS
Weight with batteries	395 g	395 g	395 g		395 g
Batteries / operating hours	2 ea. 1.5 V / 200	2 ea. 1.5 V / 200	2 ea. 1.5 V / 200		2 ea. 1.5 V / 200
Power pack socket	–	–	–		■
Dimensions in mm (W x H x D)	89 x 199 x 43	89 x 199 x 43	89 x 199 x 43		89 x 199 x 43
Protection	IP 52	IP 52	IP 52		IP 52
Approvals and certificates	CE, VDE-GS	CE, VDE-GS	CE, VDE-GS	CE	CE, VDE-GS
Accessories / included	Cable set	Cable set	Cable set	CS, HC20, RH	Cable set, RH
Software option	–	–	–	METRAwin10	METRAwin10
Article No.	**M241A**	**M242A**	**M243A**	**M253A**	**M240A**

PM X-TRA	PM PRIME	ENERGY	EU PRO	OUTDOOR	SECULIFE	METRAHIT
						
600.00 mV /// 1000.0 V	300,000 mV / 600,0 V	60.000 mV /// 600.00 V	600.00 mV /// 1000.00 V	100.00 mV /// 1000.0 V		DC voltage measuring ranges
±0.05% rdg. +3 d	±0,02 % v. MW +5 d	±0.02% rdg. +15 d	±0.05% rdg. +3 d	±0.05% rdg. +3 d		Intrinsic error for V DC
600.00 mV /// 1000.0 V	300,00 mV / 600,00 V	60.000 mV /// 600.00 V	600.00 mV /// 1000.0 V	100.00 mV /// 1000.0 V		AC voltage measuring ranges
±0.5% rdg. +9 d	±0,2 % v. MW +30 d	±0.2% rdg. +30 d	±0.5% rdg. +9 d	±0.5% rdg. +9 d		Intrinsic error for V AC
AC, AC+DC	AC, AC+DC	AC, AC+DC	AC, AC+DC	AC, AC+DC		TRMS V
600.00 µA /// 10.000 A	300,000 µA /// 10,0000 A	600.00 µA /// 10.000 A	6.0000 A / 10.000 A	100.00 µA /// 10.000 A		DC current measuring ranges
±0.5% rdg. +5 d	±0,02 % v. MW +5 d	±0.05% rdg. +20 d	±0.9% rdg. +5 d	±0.5% rdg. +5 d		Intrinsic error, A DC
600.00 µA /// 10.000 A	300,00 µA /// 10,000 A	600.00 µA /// 10.000 A	6.0000 A / 10.000 A	100.00 µA /// 10.000 A		AC current measuring ranges
±1.5% rdg. +30 d	±0,5 % v. MW +30 d	±0.5% rdg. +25 d	±1.5% rdg. +30 d	±1.5% rdg. +30 d		Intrinsic error, A AC
AC, AC+DC	AC, AC+DC	AC, AC+DC	AC, AC+DC	AC, AC+DC		TRMS A
600.00 Ω /// 60.000 MΩ	300,000 Ω /// 30,0000 MΩ	600.00 Ω /// 60.000 MΩ	600.00 Ω / 60.00 MΩ	100.00 Ω /// 40.00 MΩ	100.00 Ω /// 40.000 MΩ	Resistance measuring ranges
±0.2% rdg. +5 d	±0,05 % v. MW +5 d	±0.1% rdg. +5 d	±0.2% rdg. +5 d	±0.2% rdg. +5 d		Intrinsic error, resistance
–	–	–	–	–		4-wire milliohm measurement
–	–	■	–	–		Power and energy measurement
–	–	■	–	–		Power quality (PQ)
60.00 nF /// 600.0 µF	3,000 nF /// 3,000 mF	60.00 nF /// 600.0 µF	–	10.00 nF /// 1000 µF		Capacitance measuring ranges
±1% rdg. +6 d	±1 % v. MW +6 d	±1% rdg. +6 d	–	±1% rdg. +6 d		Intrinsic error, capacitance
–	–	■	–	–		Cable length measurement
-200 °C ... +850 °C	–200 °C ... +850 °C	-200 °C ... +850 °C	–	-200 °C ... +850 °C		Temp. measurement, Pt100/1000
-250 °C... +1372 °C (K)	–270 °C ... +1372 ° C (K)	-260 °C ... +1372 °C (J, K)	-250 °C ... +1372 °C (K)	-250 °C ... +1372 °C (K)		Temperature measurement TC
■	■	■	■	■		Continuity test
5.1 V	6,0 V	6.0 V	5.1 V	5.1 V		Diode test
600.00 Hz /// 1.0000 MHz	300,000 Hz///1,0000 MHz	600.00 Hz /// 1.0000 MHz	600.00 Hz / 300.00 kHz	100.00 Hz /// 1.0000 MHz		Frequency measuring ranges
■	■	■	–	■		Duty cycle
■	■	■	■	–		Level measurement (dB)
■	■	■	■	■		DATA / MIN-MAX storage
2048 kB (61,600)	300 000	300,000	–	540 kB (15,400)		Data storage (measured values)
■	–	–	■	■		Analog display, 35/36 scale divisions
$4^{6}/_{7}$ = 60,000 d	310 000 d	60,000 d	$4^{6}/_{7}$ = 60,000 d	4½ = 12,000 d		Digital display (places/digits)
■	■	■	■	■		Display illumination
40 analog / 10 digital	40 analog / 10 digital	40 analog / 10 digital	40 analog / 10 digital	40 analog / 10 digital		Measurements per second
100 kHz	100 kHz	100 kHz	20 kHz	20 kHz		V AC/V AC+DC bandwidth
IR / USB X-TRA	IR/Bluetooth® / USB X-TRA	IR / USB X-TRA		IR / USB X-TRA		Interface / suitable adapter
■	■	■	■	■		Automatic blocking sockets
CAT III / 1000 V CAT IV / 600 V	CAT III / 600 V CAT IV / 300 V	CAT III / 600 V CAT IV / 300 V	CAT III / 600 V	CAT III / 1000 V CAT IV / 600 V	CAT III / 600 V CAT IV / 300 V	Measuring category
DAkkS	DAkkS	DAkkS		DAkkS		Calibration certificate
395 g	400 g	400 g	395 g	395 g		Weight with batteries
2 ea. 1.5 V / 200	2 x 1,5 V / 200	2 ea. 1.5 V / 200	2 ea. 1.5 V / 200	2 ea. 1.5 V / 200		Batteries / operating hours
■	■	■	–	■		Power pack socket
89 x 199 x 43	87 x 200 x 45	89 x 199 x 43		89 x 199 x 43		Dimensions in mm (W x H x D)
IP 52	IP52	IP 52		IP 65 / IP 52		Protection
CE	CE	CE	CE	CE		Approvals and certificates
CS, HC20, RH	Kabelset, GH	Cable set, RH	CS, HC20, RH	Cable set, RH	CS, HC20, RH	Accessories / included
METRAwin10	METRAwin10	METRAwin10	METRAwin10	METRAwin10		Software option
M250A	**M248A/B**	**M249A**	**M252A**	**M2400**	**M687A/B**	**Article No.**

Please refer to the data sheets for further technical specifications.

METRAHIT	METRAHIT 2+	METRAHIT WORLD	METRAport 40S	T-COM PLUS
				
DC voltage measuring ranges	600.0 mV /// 600.0 V	600.0 mV /// 600.0 V / 1000 V	30.00 mV /// 300.00 V / 600.0 V	300.0 mV /// 300.0 V / 600 V
Intrinsic error for V DC	±0.5% rdg. +3 d	±0.5% rdg. +3 d	±0.2% rdg. +3 d	±0.5% rdg. +1 d
AC voltage measuring ranges	600.0 mV /// 600.0 V	600.0 mV /// 600.0 V / 1000 V	30.00 mV /// 300.00 V / 600.0 V	300.0 mV /// 300.0 V / 600 V
Intrinsic error for V AC	±1% rdg. +3 d	±1% rdg. +3 d	±0.5% rdg. +30 d	±1.5% rdg. +3 d
TRMS V	AC	AC	AC	AC, AC+DC
DC current measuring ranges	60.00 mA /// 6.000 A / 10.00 A	60.00 mA /// 6.000 A / 10.00 A	300.00 µA /// 3.0000 A / 10.000 A	300.0 µA /// 300.0 mA / 1.000 A
Intrinsic error, A DC	±1% rdg. +5 d	±1% rdg. +5 d	±0.5% rdg. +5 d	±0.5% rdg. +5 d
AC current measuring ranges	60.00 mA /// 6.000 A / 10.00 A	60.00 mA /// 6.000 A / 10.00 A	300.00 µA /// 3.0000 A / 10.000 A	300.0 µA /// 300.0 mA / 1.000 A
Intrinsic error, A AC	±1.5% rdg. +2 d	±1.5% rdg. +2 d	±1.5% rdg. +30 d	±1.5% rdg. +5 d
TRMS A	–	–	AC	AC, AC+DC
Resistance measuring ranges	600.0 Ω /// 6.000 MΩ/ 40.00 MΩ	600.0 Ω /// 6.000 MΩ/ 40.00 MΩ	30.00 Ω/300.00 Ω///30.000MΩ	300.0 Ω /// 30.00 MΩ
Intrinsic error, resistance	±0.7% rdg. +3 d	±0.7% rdg. +3 d	±0.2% rdg. +5 d	±0.5% rdg. +1 d
4-wire milliohm measurement	–	–	–	–
Insulation resistance measuring ranges / measuring voltage	–	–	–	5.0 kΩ///310.0 MΩ 10 V / 100 V (6/100 V)
Capacitance measuring ranges	–	40.00 nF /// 400.0 µF	30.00 nF /// 300.0 µF	30.00 nF /// 300.0 µF
Intrinsic error, capacitance	–	±1% rdg +6 d	±1% rdg. +6 d	±1% rdg. +6 d
Cable length measurement	–	–	–	■
Temp. measurement, Pt100/1000	–	–	-200 °C ... +850 °C	-200 °C ... +850 °C
Temperature measurement TC	-50 °C ... +400 °C (K)	-50 °C ... +800 °C (K)	-250 °C... +1372 °C (K)	–
Continuity test	■	■	■	■
Diode test	2 V	2 V	5.1 V	13 V
Frequency measuring ranges	100.0 Hz / 1000 Hz	100. Hz / 1000 Hz / 1000 kHz	300.00 Hz / ... / 300.00 kHz / 1000.0 kHz	300.0 Hz /// 300.0 kHz
Duty cycle	–	■	■	–
Level measurement (dB)	–	–	–	–
DATA / MIN-MAX storage	■	■	■	■
Data storage (measured values)	–	–	–	540 kB (15,400)
Analog display, 35/36 scale divisions	■	■	■	■
Digital display (places/digits)	$3^{6}/_{7}$ = 6000 d	$3^{6}/_{7}$ = 6000 d	4¾ = 30,000 d	3¾ = 3100 d
Display illumination	■	■	■	■
Measurements per second	20 analog / 2 digital	20 analog / 2 digital	20 analog / 2 digital	40 analog / 10 digital
V AC/V AC+DC bandwidth	1 kHz	1 kHz	10 kHz	10 kHz
Interface / suitable adapter	–	IR / USB-Hit	USB mini	IR / USB X-TRA
Automatic blocking sockets	■	■	–	■
Measuring category	CAT III / 600 V	CAT IV / 600 V CAT III / 1000 V	CAT II / 300 V	CAT II / 600 V CAT III / 300 V
Calibration certificate	DAkkS	DAkkS	DAkkS	DAkkS
Weight with batteries	350 g	350 g	450 g	420 g
Batteries / operating hours	2 ea. 1.5 V / up to 750	2 ea. 1.5 V / up to 750	2 ea. 1.5 V / 200	2 ea. 1.5 V / 200
Power pack socket	–	–	–	■
Dimensions in mm (W x H x D)	84 x 195 x 35	84 x 195 x 35	146 x 118 x 44	89 x 199 x 43
Protection	IP 40	IP 40	IP 42	IP 54
Approvals and certificates	CE	CE	CE	CE
Accessories / included	Cable set, RH	Cable set, RH	Cable set	Cable set, pouch, RH
Software option	–	METRAwin10	METRAwin10	METRAwin10
Article No.	**M205A**	**M206A**	**M234D**	**M246S (M260B)**

ISO (COIL)	ISO Aero	27M	IM TECH	IM XTRA	IM E-DRIVE	METRAHIT
						
300.00 mV /// 300.00 V / 1000.0 V		3.0000 V // 300.00 V / 600.0 V	300.00 mV /// 300.00 V / 1000.0 V			DC voltage measuring ranges
±0.15% rdg. +2 d		±0.1% rdg. +5 d	±0.15% rdg. +10 d			Intrinsic error for V DC
300.00 mV /// 300.00 V / 1000.0 V		3.0000 V // 300.00 V / 600.0 V	300.00 mV /// 300.00 V / 1000.0 V			AC voltage measuring ranges
±1% rdg. +3 d		±0.2% rdg. +10 d	±0.5% rdg. +30 d			Intrinsic error for V AC
AC, AC + DC		–	AC, AC + DC			TRMS V
300.0 µA /// 3.000 A / 10.00 A		With clamp	300.00 µA /// 300.00 mA / 1.0000 A			DC current measuring ranges
±0.2% rdg. +3 d		–	±0.15% rdg. +10 d			Intrinsic error, A DC
300.0 µA /// 3.000 A / 10.00 A		–	300.00 µA /// 300.00 mA / 1.0000 A			AC current measuring ranges
±1.5% rdg. +5 d		–	±0.5% rdg. +30 d			Intrinsic error, A AC
AC, AC+DC		–	AC, AC+DC			TRMS A
300.00 Ω /// 30.000 MΩ		300.0 Ω // 30.0 MΩ	300.00 Ω /// 30.000 MΩ			Resistance measuring ranges
±0.5% rdg. +2 d		±0.1% rdg. +5 d	±0.15 % rdg. + 10 d			Intrinsic error, resistance
–		3.000 mΩ //// 30.000 Ω	3.000 mΩ /// 30.00 Ω			4-wire milliohm measurement
5.0 kΩ /// 3100 MΩ 50 V///1000 V	5.0 kΩ /// 3100 MΩ 10 V///500 V	–	–	300.0 kΩ /// 3100 MΩ 50 V///1000 V		Insulation resistance measuring ranges / measuring voltage
30.00 nF /// 300.0 µF		–	30.00 nF /// 300.0 µF			Capacitance measuring ranges
±1% rdg. +6 d		–	±1% rdg. +6 d			Intrinsic error, capacitance
–		–	–			Cable length measurement
-200.0 °C... +850.0 °C		-200 °C ... +600 °C	-200.0 °C... +850.0 °C			Temp. measurement, Pt100/1000
-250.0 °C ... +1372.0 °C		–	-250.0 °C ... +1372.0 °C			Temperature measurement TC
■		■	■			Continuity test
10 V		3 V	5.1 V			Diode test
300.0 Hz ... 300.0 kHz		300.00 Hz / 3.0000 kHz	300.00 Hz ... 300.00 kHz			Frequency measuring ranges
■ (COIL only)		–	■			Duty cycle
–		–	–			Level measurement (dB)
■		■	■			DATA / MIN-MAX storage
540 kB (15,400)		32 kB (1000)	64 MB (300,000)			Data storage (measured values)
■		–	■ (continuous bar graph)			Analog display, 35/36 scale divisions
4¾ = 30,000 d		4¾ = 31,000 d	4¾ = 30,000 d			Digital display (places/digits)
■		■	■			Display illumination
40 analog / 10 digital		2 digital	40 analog / 10 digital			Measurements per second
10 kHz		1 kHz	100 kHz			Bandwidth
IR / USB X-TRA		IR / USB-Hit	BT			Interface / suitable adapter
■		–	■			Automatic blocking sockets
CAT II / 1000 V CAT III / 600 V		CAT II / 600 V	CAT III / 1000 V CAT IV / 600 V			Measuring category
DAkkS		DAkkS	DAkkS			Calibration certificate
420 g		420 g	700 g with battery pack			Weight with batteries
2 ea. 1.5 V / 200		3 ea. 1.5 V / 20	Rechargeable LiPo battery, 4000 mAh / approx. 20 h			Batteries / operating hours
■		■	–			Power pack socket
89 x 199 x 43		84 x 195 x 35	105 x 235 x 56			Dimensions in mm (W x H x D)
IP 54		IP 54	IP 52			Protection
CE		CE	CE			Approvals and certificates
Cable set, pouch, GH (COIL adapter)		Cable set, RH	Probe (IM XTRA & E-DRIVE), cable set, 2 Kelvin clips or Kelvin clip and probe (IM E-DRIVE), rechargeable lithium battery, USB power pack with cable, rubber holster, hard case, IZYTRONIQ BUSINESS STARTER			Accessories / included
METRAwin10		METRAwin10	IZYTRONIQ			Software option
M246B (246C)	M246M	M227A	M272S	M273S	M274S	Article No.

SHUNTS

Shunts for Multimeters



NW3A



SR9800

Shunt Resistors for Multimeters Without Current Measuring Function

The shunt resistors serve as adapters for multimeters without their own current measuring function, or are used to extend the current range.

- NW3A **(Z205B)**: 3 A – 0.1 Ω – class 0.5 – 600 V – CAT IV – 100 mV/A

Shunt for METRAHIT ENERGY

In combination with the CP 1800 current clamp, the **SR9800** permits power and energy measurements with the METRAHIT ENERGY – even for DC applications.

Type	Article
NW3A	Z205B
SR9800	Z249A

PMA 16

Power Measuring Adapter



The power measuring adapter is a grounded intermediate plug for safe, trouble-free measurement of power consumption of single-phase consumers with up to 16 A connected by means of a plug.

Type	Article
PMA 16	Z228A

USB-HIT / USB-PACK

Bidirectional IR-USB Interface Adapter



Data are transmitted from the multimeter to the adapter in an electrically isolated, bidirectional fashion, and to the USB interface for PCs and laptops.

- USB-Pack: adapter with USB cable including METRAwin10/METRAHit software
- USB-Hit: Bidirectional Infrared-USB interface adapter for METRAHIT World and series 27 multimeters with serial IR interface for connection to a USB Port at a PC

Type	Article
USB-HIT	Z216A
USB-Pack	Z216B

USB XTRA

Bidirectional IR-USB Interface Adapter





Bidirectional infrared-USB interface adapter for Star-line multimeters with serial IR interface for connection to a USB port at a PC

Adapter for data transmission between the multimeter and the PC

Type	Article
USB XTRA	Z216C

USB XTRA SET

USB X-TRA Interface Adapter with METRAwin 10 Software







Set consisting of USB X-TRA bidirectional interface adapter and METRAwin 10 / METRAHIT software

Type	Article
USB XTRA Set	Z216D

NA HIT 2x, NA HIT 27, NA X-TRA, NA T-COM

Power Packs



NA X-TRA: Power pack, 90 ... 250 V_{AC} / 5 V_{DC}

NA HIT 2x: Power pack, 90 ... 250 V_{AC} / 5 V_{DC}

NA HIT 27: Power pack, 90 ... 250 V_{AC} / 5 V_{DC}

NA T-COM: Power pack, 90 ... 250 V_{AC} / 5 V_{DC}

For battery-saving mains operation during continuous measurement with multimeters, e.g. when used as a data logger

Broad range input: 50 / 60 Hz – measuring category: 600 V CAT IV **(Z218G, H)**, 600 V CAT II **(Z218J, T)**

Type	Article
NA X-TRA:	Z218G
NA HIT 2x	Z218H
NA HIT 27	Z218J
NA T-COM	Z218T

Z270A, Z270E, Z270G, Z270L

Power Pack, Rechargeable Battery and Mains Module for METRAHIT IM Series



Z270L



Z270G

Z270A/G: Rechargeable lithium-polymer battery for METRAHIT IM

Z270E: Mains module for METRAHIT IM, USB+Power module

Z270L: Charger with interchangeable primary connections (EU, UK, US, Asia) for M27x rechargeable battery

Type	Article
M27x battery	Z270A / Z270G
M27x power pack	Z270E
M27x0 power pack	Z270L

AC/DC Current Sensors

Current Clamp Sensors with Voltage Output



CP30 / CP1100



CP330 / CP1800

CP30, CP330 and CP1100 current clamp sensors have been developed for precise contactless measurement of alternating and direct current.

They're well suited for precision current measurement thanks to the use of the latest Hall effect technology.

FEATURES:

- AC and DC current measurement for TRMS multimeters
- Highly accurate: 1%
- Automatic shutdown for extended battery service life
- Transformation ratios can be set directly at many METRAHIT multimeters.
- Easy zero balancing by simply pressing a key
- Measuring category: 300 V CAT III

Type	Article
CP30	Z201B
CP330	Z202B
CP1100	Z203B
CP1800	Z204A

Type	Measuring Ranges* DC, AC	Resolution	Cable Dia. mm	Overcurrent Capacity	Frequency Range	Intrinsic Uncertainty ± (% rdg. + A)	Gain Drift / °C	Trans. Ratio mV/A
CP30	30 A	1 mA	25	500 A (60 s)	DC to 20 kHz (-1 dB)	1% +2 mA	0.01	100
CP330	30 / 300 A	50 mA / 100 mA	25	600 A (60 s)	DC to 20 kHz (-3 dB)	1% +50 / 100 mA	0.1	10 / 1
CP1100	100 / 1000 A	100 mA / 500 mA	32	2000 A (60 s)	DC to 20 kHz (-1 dB)	1% +100 / 500 mA	0.1	10 / 1
CP1800	125 / 1 250 A	100 mA/ 500 mA	32	2000 A (60 s)	DC to 20 kHz (–1 dB)	1% +100 / 500 mA	0.1	10 / 1

* CP 30: DC or AC_{peak}, CP 330 / 1100 / 1800: DC or AC_{RMS}

FLEXIBLE AC CURRENT SENSORS

Flexible AC Current Sensors with Voltage Output



METRAFLEX 3000

METRAFLEX 3000 and **METRAFLEX 300M flexible current sensors with voltage output** for measuring alternating current at difficult to access places, highly insulated and with range selector switch (selectable transformation ratio)

Maximum phase angle error is 2.5° at a frequency of up to 1 kHz.

INCLUDED WITH THE METRAFLEX:

- Current sensor with connector cable
- Two 1.5 V AA batteries

Type	Article
METRAFLEX 3000	Z207E
METRAFLEX 300M	Z207M

Type	Measuring Range AC	Measuring Category	Loop Circumf., mm	Trans. Ratio mV/A	Frequency Range	Intrinsic Uncertainty ± (% rdg. + mA)
METRAFLEX 3000	30 / 300 / 3000 A	CAT III / 1000 V CAT IV / 600 V	610	100 / 10 / 1	10 Hz ... 10 kHz	1% ± 100
METRAFLEX 300M	3 / 30 / 300 A	CAT III / 1000 V CAT IV / 600 V	160	1000 / 100 / 10	20 Hz ... 100 kHz	1% ± 100 / 100 / 500



METRAFLEX 300M / 660M

METRAFLEX 660M Flexible Current Transformer with Power Supply

Type	Measuring Range AC	Measuring Category	Loop Circumf., mm	Trans. Ratio mV/A	Frequency Range	Intrinsic Uncertainty ± (% rdg. + mA)
METRAFLEX 660M	60 / 600 A	CAT III / 600 V	250	100 / 10	10 Hz ... 2 kHz	1% ±
METRAFLEX 300M	3 / 30 / 300 A	CAT III / 1000 V CAT IV / 600 V	160	1000 / 100 / 10	20 Hz ... 100 kHz	1% ± 100 / 100 / 500

AC CURRENT SENSORS

With Voltage Output, mV/A



WZ12C

AC Current Sensors with Voltage Output, mV / A

Current within conductors can be conveniently and safely measured with current clamp sensors and multimeters.

SCOPE OF DELIVERY:

- Current sensor with connector cable

ADVANTAGES:

- The electrical circuit need not be interrupted – no electrical connection to the conductor
- Measurement of high amperages – no multimeter overloading due to mains current surges

Type	Article
WZ12B	Z219B
WZ12C	Z219C
WZ11B	Z208B
Z3512A	Z225A



WZ11B



Z3512A

Type	Measuring Range, AC	Measuring Category	Cable Dia. mm	Trans. Ratio mV/A	Frequency Range	Intrinsic Uncertainty ± (% rdg. + A)
WZ12B	0.01 ... 100 A	CAT III / 300 V	15	100	45 ... 65 ... 500 Hz	1.5% +0.1 m
WZ12C	0.001 ... 15 A / 1 ... 150 A	CAT III / 300 V	15	1000 / 1	45 ... 65 ... 500 Hz	3% +0.15 m / 2% +0.1
WZ11B	0.5 ... 20 A / 5 ... 200 A	CAT III / 600 V	20	100 / 10	30 ... 48 ... 65 / ... 500 Hz	1 ... 3%
Z3512A	0.001 ... 1A 0.01 ... 10 A 0.1 ... 100 A 1 ... 1000 A	CAT III / 600 V	52	1000 / 100 / 10 / 1	10 ... 48 ... 65 Hz / ... 3 kHz	0.2% ... 0.7%

AC Current Transformers

With Current Output, mA / A



Z3512

AC Current Transformers with Current Output, mA / A

ADVANTAGES:

- The electrical circuit need not be interrupted – no electrical connection to the conductor
- Measurement of high amperages – no multimeter overloading due to mains current surges

SCOPE OF DELIVERY:

- Current sensor with connector cable

Type	Article
WZ12A	Z219A
WZ12D	Z219D
WZ11A	Z208A
Z3511	GTZ3511000R0001
Z3512	GTZ3512000R0001



Z3511



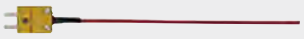
WZ12A/D

Type	Measuring Range, AC	Measuring Category	Cable Dia. mm	Trans. Ratio mA / A	Frequency Range	Intrinsic Uncertainty
WZ12A	15 ... 180 A	CAT III / 300 V	15 mm	1	45 ... 65 ... 400 Hz	±3% rdg.
WZ12D	0.03 ... 150 A	CAT III / 300 V	15 mm	1	45 ... 65 ... 500 Hz	± (2.5% rdg. +0.1 mA)
WZ11A	1 ... 200 A	CAT III / 600 V	20 mm	1	48 ... 65 ... 400 Hz	±1 ... 3% rdg.
Z3511	4 ... 500 A	CAT III / 600 V	30 x 63 mm	1	45 ... 65 Hz ... 1 kHz	±(3% rdg. +0.4 A)
Z3512	0.5 ... 1000 A	CAT III / 600 V	52 mm	1	30 ... 45 ... 65 Hz ... 5 kHz	±0.5 ... 0.7% rdg.

TEMPERATURE SENSORS (TC) Temperature Probes and Thermocouples with Miniature Plug & adapter



Z3431-6



Z3431-8



Z102T

Type	Article
Z3431-5	GTZ3431005R0001
Z3431-6	GTZ3431006R0001
Z3431-8	GTZ3431008R0001
Z3431-TA	Z102T

Suitable for temperature measurement from -25 °C ... +1150 °C. The measurement output is connected to the mV/V measurement input at the multimeter.

SCOPE OF DELIVERY:

- **Z3431-5/-6/-8**: type K thermocouple with mini-plug
- **Z3431-TA:** adapter from mini-socket to 4 mm plug for connecting type K sensors to multimeters with TC

* For multimeters without measuring function for type K thermocouples

Type	Measuring Range	Sensor Type	Intrinsic Uncertainty	Input Ω Multimeter	Output V	Operating Temperature	Power Supply
Z3431-5	... +1100 °C	NiCr-NiAl, type K thermocouple	Standard immersion sensor, can be plugged into adapter type K Z3431-TA				
Z3431-6	... +850 °C	NiCr-NiAl, type K thermocouple	Surface sensor, can be plugged into adapter type K Z3431-TA				
Z3431-8	... +250 °C	NiCr-NiAl, type K thermocouple	Flexible, insulated sensor, can be plugged into adapter type K Z3431-TA				
Z3431-TA	–	Type K adapter	For connecting type K sensors with mini-plug to multimeters with thermocouple measuring function				

TEMPERATURE SENSORS Temperature Sensors with 4 mm Plugs



TF400 SURFACE



TF400CAR



TF220 / TF550 Z3409

Type	Article
Z3409	GTZ3409000R0001
TF220	Z102A
TF550	GTZ3408000R0001
TF400CAR	Z102C
TF400 SURFACE	Z102E

SCOPE OF DELIVERY:

- Z3409: Pt100 temperature sensor for surface and immersion measurements
- TF220: Pt1000 immersion sensor for measurements in gases and liquids
- TF550: Pt100 immersion sensor for measurements in ovens and freezers
- TF400 SURFACE: Fast reacting surface temperature sensor, type K thermocouple
- TF400CAR: Pt1000 temperature sensor for oil temperature measurement

Type	Sensor Element	Length of Element / Sensor	Temp. Range	Accuracy	Intrinsic Uncertainty K at 0 °C / ... °C	Transient Recovery, T90 Water/Air	Lead in mm	Outer Jacket / Insulation
Z3409	Pt100	130 / 1000 mm	-40 ... +600	Class A	0.15 / 600 : 1.35	5 s / 30 s	Strand, 2 ea. 0.35	PVC / PVC
TF220	Pt1000	39 / 1500 mm	-50 ... +220	Class B	0.3 / 220 : 1.4	8 s / 33 s	Strand, 2 ea. 0.35	Teflon / Teflon
TF550	Pt100	40 / 1500 mm	-50 ... +550	Class B	0.3 / 550 : 3.1	8 s / 33 s	Strand, 2 ea. 0.35	V4A / glass
TF400CAR	Pt1000	810 / 2310 mm	-50 ... +500	Class B	– / –	– / –	Strand, 2 ea. 0.35	PVC / PVC
TF400 SURFACE	K (NiCr-Ni)	280 / 130 mm	-50 ... +400	–	– / –	2 s	Strand, 2 ea. 0.35	PVC / PVC

OVERVIEW

Multimeter Accessories

Type	METRAHIT																			METRALINE DM 41 / DM 61 / DM 62	METRAmax 2	METRA-port	
	AM BASE / BASE / EBASE	AM TECH / PM TECH / TECH / ETECH	AM XTRA / PM XTRA / X-TRA / EXTRA	SECULIFE HIT	AM PRO / EU PRO / PRO / ESPECIAL	OUTDOOR	T-COM / plus	ISO / ISO@Aero / COIL	ENERGY	PM PRIME / ULTRA	METRACAL MC	CAL	2 plus	WORLD	27M/I	27H+E CAR	2 A	IM XTRA / E-DRIVE / TECH			40S	3 A
Shunts																							
NW3A	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
SR9800	–	–	–	–	–	–	–	–	■	–	–	–	–	–	–	–	–	–		–	–	–	–
Adapter																							
USB X-TRA	–/■	–/■	■	■	–/■	■	■	■	■	■	■	■	–	–	–	–	–	–		–	–	–	–
USB X-TRA SET	–/■	–/■	■	■	–/■	■	■	■	■	■	■	–	–	–	–	–	–	–		–	–	–	–
USB-Hit	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	■	–	–		–	–	–	–
USB-Pack	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	■	–	–		–	–	–	–
COIL Adapter 50 mH (Z270F)	–	–	–	–	–	–	–	–/– /■	–	–	–	–	–	–	–	–	–	■		–	–	–	–
COIL Adapter XTRA (Z270M)	–	–	–	–	–	–	–	–/– /■	–	–	–	–	–	–	–	–	–	■/■ /–		–	–	–	–
PMA16	■	■	■	■	■	■	■	■	■	■	■	–	–	–	–	–	■	–		–	■	■	■
Power Packs, Chargers, Rechargeable Batteries																							
NA HIT 2x	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	–	–		–	–	–	–
NA HIT 27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	–	–		–	–	–	–
NA X-TRA	–	–	■	■	–	■	■	■	■	■	■	■	–	–	■*	–	–	–		–	–	–	–
NA T-COM	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–	–	–
M27x charger (Z270L)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■		–	–	–	–
Rechargeable lithium polymer battery (Z270A/G)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■		–	–	–	–
Mains module (Z270E)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■		–	–	–	–
Current Sensors																							
CP30	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
CP330	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
CP1100	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
CP1800	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
WZ11B	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
WZ12B	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
WZ12C	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
Z3512A	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	■	■	■
Flexible Current Sensors																							
METRAFLEX 3000	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	–	■	–
METRAFLEX 300M	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	–	■	–
METRAFLEX 660M	■	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■		■	–	■	–
Current Transformers																							
WZ11A	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	■	■	■
WZ12A	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	–	–	■
WZ12D	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	–	–	■
Z3511	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	■	–	■
Z3512	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	■	■	■
Z3514	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	–	■	■
WZ1001	–	■	■	■	■	■	■	■	■	■	–	–	■	■	–	–	–	■		■	–	■	■
Temperature Sensors and Probes																							
TF400CAR	–	–/■	■	■	–	■	■	■	■	■	■	–	–	–	■	■	■	■		–	–	■	–
TF400 SURFACE	■	■	■	■	■	■	■	■	■	■	■	–	■	■	–	–	–	■		■	–	■	–
TF220	–	–/■	■	■	–	■	■	■	■	■	■	–	–	–	■	■	■	■		–	–	■	–
TF550	–	–/■	■	■	–	■	■	■	■	■	■	–	–	–	■	■	■	■		–	–	■	–
Z3409	–	–/■	■	■	–	■	■	■	■	■	■	–	–	–	■	■	■	■		–	–	■	–
Z3431-TA	■	■	■	■	■	■	■	■	■	■	■	–	■	■	–	–	–	■		■	–	■	–

* For dates of manufacture through 2004 only

CABLE SETS

Cable Sets with Permanently Mounted Test Probes



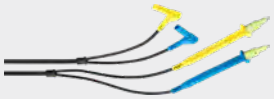
KS17-2 KS29



KS17-S



KS-NTS



KS21-T



KY95-3



Z502U



KY94



AK-4M/6F

Cable sets with permanently mounted test probes and contact-protected angle plugs for safe measuring

Hook clips, alligator clips or push-on lugs can be attached to the test probes for special measuring tasks.

- KS29 cable set:
  1000 V / CAT III, 1 A safety cable set for power meters
- KS17-2 cable set:
  1000 V / CAT III, 1 A, 600 V / CAT IV, 1 A
  1000 V / CAT II, 16 A, 120 cm long
- KS17-S cable set:
  1000 V / CAT II, 150 cm long,
  2 mm dia. stainless steel tips
- KS-NTS cable set:
  1000 V / CAT II / III, 20 A,
  double insulated silicon measurement cables, 120 cm long, with one pair each of small test probes, alligator clips, clip hooks and North American test probes
- KS21-T cable set
  1000 V / CAT II, 16 A,
  200 cm long, for cable multimeters
- KY95-3 alligator clip:
  1000 V / CAT III, 16 A,
- Magnetic measuring contacts with 4 mm plug
  1000 V / CAT III, 4 A
- KY94 hook clips (1 pair)
- AK-4M/6F: Adapter cable, 4 mm male to 6 mm female, for charging plugs for hybrid and electric vehicles

Type	Article
KS29	Z229A
KS17-2	GTY3620034P0002
KS17-S	Z110H
KS-NTS	Z110W
KS21-T	Z110U
KY95-3	Z110J
Magnetic measuring contacts – 4 mm	Z502U
KY94	GTY3610094P01
AK-4M/6F	Z110L

KELVIN CLIPS

Kelvin Clips



Kelvin Clip



Kelvin Probe



Kelvin Clip & Probe

Kelvin clips are used for connecting low impedance resistors (e.g. contact resistors, shunts etc.) to an ohmmeter with 4-wire connection. This allows for compensation of cable resistance.

- KC4: Kelvin clips (1 set = 2 pieces) for 4-pole connection of low-resistance DUTs, cable length: 120 cm, clip for connection to DUTs with diameters of up to 30 mm
- KC27: Kelvin probes (1 set = 2 pieces) with 2 stainless steel tips for 4-pole connection of low-resistance DUTs, 120 cm cable length
- KC&S: Cable set including 1 Kelvin clip and 1 Kelvin probe, as well as 2 stainless steel tips for 4-wire measurement, 120 cm cable length with 4 mm angle plugs
- KCV100: 100 m extension cable, 2-pole, fur 4-wire mΩ measurements with METRAHIT IM, cable resistance < 5 Ω

Type	Article
KC4	Z227A
KC27	Z227B
KC&S	Z227C
KCV100	Z227D

ACCESSORIES

Multimeters Overview

Type	METRAHIT																			METRALINE DM 41 / DM 61 / DM 62	METRALINE DMM16	METRAmax			METRAport	
	AM BASE / BASE / EBASE	AM TECH / PM TECH/TECH / ETECH	AM XTRA / PM XTRA/X-TRA / EXTRA	SECULIFE HIT	AM PRO / EU PRO / PRO / ESPECIAL	OUTDOOR	T-COM / plus	ISO / ISO@Aero/COIL	ENERGY	PM PRIME / ULTRA	METRACAL MC	CAL	2 plus	WORLD	27M/I	27H+E CAR	1A/2A	IM XTRA / E-DRIVE / TECH			2	3	12	40S	3 A
Measuring Accessories																										
KS17-ONE	–	–	–	–	–	–	–	–	–	■	–	–	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KS17-2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KS17-S	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KS-AP	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KS-NTS	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
KS21-T	–	–	–	–	–	–	■	–	–	–	–	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–
KS29	–	–	–	–	–	–	–	–	■	–	■	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
KY95-3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Z502U	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Probe (Z270S)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■/■/–	–	–	–	–	–	–	–	–
Kelvin Clips																										
KC4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	–	■	–	–	–	–	–	–	–	–
KC27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	–	■	–	–	–	–	–	–	–	–
KC&S	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	–	■	–	–	–	–	–	–	–	–
KCV100	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	■	–	–	–	–	–	–	–	–

FUSES

Overview

Type	Designation	Article	For following devices:
FF 16 A / 600 V AC	Fuse link	Z109A	METRAmax 12, METRAport 3A, METRAHIT 2A
FF (UR) 16 A / 1 kV AC/DC	Fuse link	Z109B	METRAHIT 24S ... 26S
FF (UR) 1.6 A / 1 kV AC/DC	Fuse link	Z109C	METRAHIT 23S ... 26S, 27M / I, 27H+E CAR, 29S
FF (UR) 16 A / 600 V AC	Fuse link	Z109D	METRAHIT ONE Plus
FF 1.6 A / 700 V AC	Fuse link	Z109E	METRAHIT ONE Plus / 2 / WORLD / 2A, T-COM (PLUS), METRAmax 12, METRAport 3A
FF 1 A / 380 V (5 x 20)	Fuse link	Z109H	METRAport 32S / 32XS
T 16 A / 500 V (6.3 x 32)	Fuse link	Z109I	METRAport 32S / 32XS
FF 630 mA / 700 V	Fuse link	Z109J	METRAHIT 1A
FF 6.3 A / 400 V	Fuse link	Z109K	METRAHIT 1A
FF (UR) 10 A / 1 kV AC/DC	Fuse link	Z109L	METRAHIT PRO, TECH, X-TRA, ETECH, EXTRA, ISO (AERO), OUTDOOR, 2, WORLD, ULTRA, 29S, ENERGY, AM XTRA, AM TECH, AM PRO, AM BASE, PM PRIME, PM XTRA, PM TECH, EU PRO
FF 0.63 A / 380 V (5 x 20)	Fuse link	Z109M	METRACAL MC, MULTICAL
FF 0.16 A / 400 V (F1 CAL)	Fuse link	Z109N	METRACAL MC (calibrator input), METRAHIT CAL
FF 1 A / 1000 V (6.3 x 32)	Fuse link	Z109O	METRAHIT IM XTRA, E-DRIVE, TECH
FF 0.315 A / 1000 V (6.3 x 32)	Fuse link	Z109P	METRAHIT IM XTRA, E-DRIVE, TECH

ACCESSORIES

Pouches, Hard Cases, Covers, Hangers for Multimeters

Type	Designation	Article	METRAHIT				METRAmax		METRAport
			AM Series, PM Series, S Series	ONE ... 30M	1 A / 2 A	IM Series	2 / 3 / 6	12	40S / 3A
HitBag	Cordura belt pouch	**Z115A**	■	■	■	–	■	■	■
HitBag +	Large belt pouch	**Z115B**	■	■	■	–	■	■	■
HIT-Clip	Magnetic hanger and belt strap for METRAHIT with rubber holster and METRACAL MC	**Z117A**	■	■	–	■	–	–	–
F809	Ever-ready case with cable compartment	**GTY3172083P01**	–	–	■	–	–	–	–
F823	Ever-ready case with cable compartment	**GTY3172097P01**	–	–	–	–	–	■	–
F825	Ever-ready case with cable compartment	**GTY3172100P01**	–	–	–	–	■		–
F829	Carrying pouch	**GTZ3301000R0003**	■	■	–	–	–	■	–
F836	Ever-ready case with cable compartment	**GTZ3302000R0001**	■	■	–	–	–	–	–
F841	Carrying pouch	**Z104A**	–	–	■	–	■	■	■
GH X-TRA	Rubber holster	**Z104C**	■	–	–	–	–	–	–
GH18	Rubber holster with carrying strap	**GTZ3212000R0001**	–	■	–	–	–	–	–
GH19	Rubber holster	**Z104B**	–	–	–	–	■	–	–
HC20	Hard case for 1 device, accessories	**Z113A**	■	■	–	–	–	–	–
HC30	Hard case for 2 devices, accessories	**Z113B**	■	■	–	–	–	–	–
HC30	Hard case with foam inserts on both sides	**Z113E**	■	■	■	–	■	■	■
HC40	HC40 hard case, METRAHIT IM, black	**Z270K**	–	–	–	■	–	–	–
HC40	HC40 hard case, METRAHIT IM, orange	**Z270H**	–	–	–	■	–	–	–



HitBag



HitBag +



F809



F823



F825



F829



F836



F841



GH X-TRA



GH 19



HIT-Clip



GH18



HC20



HC30

POWER QUALITY 02

Power quality – always on the safe side with clean electrical networks. Industry, commerce, health care services, banks and other service providers are extremely dependent on electrical and electronic systems. These systems influence power quality themselves in many ways, but they react extremely sensitively to disturbances as well.

There's a single convincing response to the numerous challenges faced by users in the area of electrical power supply.

With the help of these innovative class A products, all relevant measured quantities can be acquired which are decisive for the quality of electrical supply power – the perfect foundation for sustainable optimization.

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MAVOWATT 230 / 240 / 270

The class A mains analyzers included in the MAVOWATT product range are used for monitoring, analysis and recording of mains quantities. Disturbances and events can be easily pinpointed, documented and analyzed with reference to applicable standards.



MAVOWATT 230
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MAVOWATT 240
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MAVOWATT 270
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MAVOWATT 20

The MAVOWATT 20 mains and power analyzer acquires power, demand and energy, and it calculates consumption costs as well as CO_2 footprint.



MAVOWATT 20
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MAVOWATT 30

The mains analyzer simultaneously monitors TRMS values, harmonics, flicker and transients down to a time range of approximately 80 µs. Automatic detection of measuring configuration and current type.



MAVOWATT 30
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CURRENT SENSORS / CURRENT CLAMPS

AC Current Clamp Sensors
AC-DC Current Clamp Sensors
Flexible AC Current Sensors
Miniature AC current sensors



AC CURRENT CLAMP SENSORS
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AC CURRENT CLAMP SENSORS
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FLEXIBLE AC CURRENT SENSORS
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MINIATURE AC CURRENT SENSORS
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LINAX PQ5000-MOBILE

Portable, Programmable 3-Phase Energy and Power Disturbance Analyzer



LINAX PQ5000-MOBILE
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LINAX PQ3000 / PQ5000

Transparent Monitoring of Power Quality and Energy Consumption – Class A Certified Power Quality Analysis per IEC 61000-4-30, Edition 3



LINAX PQ3000
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LINAX PQ5000
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MAVOWATT 4

The multiple power meter for direct measurement of DC power, as well as RMS power measurement for single-phase alternating current and balanced load three-wire, three-phase current



MAVOWATT 4
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MAVOWATT 230 / 240 / 270 / 270-400

Three-Phase Energy and Power Disturbance Analyzers per IEC 61000-4-30, Edition 3, Class A



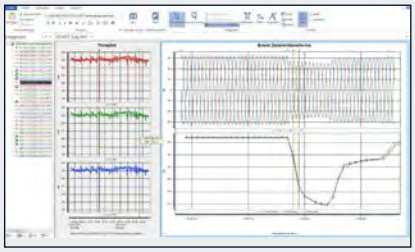
MAVOWATT 230



MAVOWATT 240



MAVOWATT 270-400



DranView 7: Fault Recording with Detail View

With Software

DranView 7

Applications

The mains analyzers included in the MAVOWATT product range are used for monitoring, analysis and recording of mains quantities.

All relevant measured quantities can be acquired which are decisive for the quality of electrical supply power. Disturbances and events can be easily pinpointed, documented and analyzed with reference to applicable standards. Power measurements at frequency converter outputs are also no problem.

Diverse communication options, extremely safe operation and numerous recording and report generating functions distinguish these products.

Customer Benefits

SAFE

- 1000 V CAT III / 600 V CAT IV for safe work in public networks, as well as for measurements of up to 1000 V_{RMS} AC/DC in industrial environments.
- Wireless remote access via smartphone, tablet and PC permits hazard-free work and configuration in safety-critical environments
- Complies with the latest industrial standards and permits legally secure recording of, for example, voltage quality per EN 50160 / IEC 61000

INTUITIVE AND PRODUCTIVE

- Convenient operation and analysis thanks to the enormous 7" color touch-display
- Automatic detection of electrical system types, as well as nominal values for voltage, current and frequency
- Quick overview during measurement thanks to the PQ and energy dashboard with real-time warnings and red-green display
- Supports troubleshooting and diagnosis of interference sources with the help of AnswerModules®

FLEXIBLE

- Power measurements at frequency converter outputs
- 8 differential inputs (4 U / 4 I) permit precise and flexible acquisition of measured values in star and delta systems or simultaneous, direct measurement of AC and DC signals of up to 1000 V_{RMS}
- 1 MHz sampling and 2000 V_{PEAK} for capturing transients
- Various frequency bands for worldwide use in systems with 16⅔, 50 and 60 Hz, or optionally in 400 Hz systems as well
- GPS receiver input for time synchronization
- Ethernet, WiFi, Bluetooth and USB for data transmission and remote access

Compliance with the Standards

Amongst others, the instruments fulfill all requirements specified in edition 3 of the IEC 61000-4-30 measuring instrument standard for “class A instruments”, as well as IEC 61000-4-7 (measuring procedures for harmonics) and IEC 61000-4-15 (flicker meters).

This permits legally secure recording of the limit values stipulated in EN 50160 (voltage characteristics of electricity supplied by public distribution networks), e.g. for voltage quality.

MAVOWATT 230

- All functions and measurements: class A (4U/ 4I)
- Load profile analyses and energy measurements
- Voltage quality per EN 50160 including report function
- Acquisition of transients: 512 values per period
- Two frequency bands: 16⅔ and 50/60 Hz
- Events recording: RMS and waveform
- Pre/post-trigger: max. 100 periods
- Snapshot function
- USB and Ethernet
- Time synchronization via GPS clock (optional)
- AnswerModules® – analysis module for motor status

MAVOWATT 240

All functions same as MAVOWATT 230 plus:

- AnswerModules® – analysis module for voltage dip direction
- Switching of compensation capacitors, motor status
- Ripple control signal recording
- Expanded detail time window for events with up to 10,000 periods (pre/post-trigger)
- Bluetooth
- WiFi

MAVOWATT 270

All functions same as MAVOWATT 240 plus:

- 1 MHz sampling for transients up to 2000 V_{PEAK}

MAVOWATT 270-400

All functions same as MAVOWATT 270 plus:

- Expanded frequency band for 400 Hz applications

MAVOWATT
230 / 240 / 270 / 270-400 Overview

Instrument		MAVOWATT 230	MAVOWATT 240	MAVOWATT 270
Application / Function				
Communication	Ethernet	■	■	■
	Wi-Fi	–	■	■
	Bluetooth	OPTIONAL	■	■
	USB	■	■	■
	VNC for full remote control of the instrument	■	■	■
	Apple and Android app for acquisition and alarm generation	■	■	■
	GPS time synch * (see comment)	■	■	■
Inputs	(4) differential, voltage channels, 0 to 1000 V AC/DC	■	■	■
	(4) differential, voltage channels for current sensors, 0.1 to 6000 V (AC/DC) with supply voltage for flexible current sensors	■	■	■
Measurements	1000 V CAT III, 600 V CAT IV	■	■	■
	IEC 61000-4-30:3, edition 3, class A with certificate	■	■	■
	Sampling rate: 512 values/period/channel for U & I	■	■	■
	U-I dips and swells	■	■	■
	Transients as of 32/40 µs (60/50 Hz)	■	■	■
	Transients as of 1 µs	–	–	■
	Power demand and energy consumption	■	■	■
	IEEE 1459, advanced energy	–	■	■
	Harmonics and interharmonics U (127), I (63)	■	■	■
	EN 50160, edition 3	■	■	■
	400 Hz monitoring	–	–	(400)*
AnswerModules	Motor status	■	■	■
	Voltage dip direction	–	■	■
	Switching of compensation capacitors	–	■	■
Setups	Automatic setups for power quality, power demand and energy consumption	■	■	■
	Setup wizard	■	■	■
	Monitoring operating modes	7	9	9
	Max. pre/post-trigger periods	100	10,0000	
	Number of transient triggers	3	3	4

* Comment:
- GPS time synch necessitates an optional GPS receiver and antenna **(Z802H)**.
- (400) with MAVOWATT 270-400 only

MAVOWATT 230 / 240 / 270 / 270-400 Packages

Designation	Type	Article
Instrument including set of measurement cables, rechargeable battery, charger, factory calibration certificate, DranView 7 Professional software and carrying pouch	MAVOWATT 230	M820A
MAVOWATT 230 incl. acc. (see above) and the following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 230 Flex Package	M820D
MAVOWATT 230 incl. acc. (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 230 Mini Flex Package	M820H
MAVOWATT 230 including accessories (see above) and the following current clamps: 4 TR2510B (1 … 10 A)	MAVOWATT 230 TR2510B Package	M820N
Instrument including same accessories as MAVOWATT 230 plus Bluetooth adapter and DranView 7 Enterprise Software	MAVOWATT 240	M820B
MAVOWATT 240 incl. acc. (see above) and the following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 240 Flex Package	M820F
MAVOWATT 240 incl. acc. (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 240 Mini Flex Package	M820I
MAVOWATT 240 including accessories (see above) and the following current clamps: 4 TR2510B (1 … 10 A)	MAVOWATT 240 TR2510B Package	M820O
Instrument including same accessories as MAVOWATT 230 plus Bluetooth adapter and DranView 7 Enterprise Software	MAVOWATT 270	M820C
MAVOWATT 270 incl. acc. (see above) and the following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 270 Flex Package	M820G
MAVOWATT 270 incl. acc. (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 270 Mini Flex Package	M820J
MAVOWATT 270 including accessories (see above) and the following current clamps: 4 TR2510B (1 ... 10 A)	MAVOWATT 270 TR2510B Package	M820P
Instrument including same accessories as MAVOWATT 230 plus Bluetooth adapter and DranView 7 Enterprise Software	MAVOWATT 270-400	M820K
MAVOWATT 270-400 incl. acc. (see above) and following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 270-400 Flex Package	M820L
MAVOWATT 270-400 including accessories (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 270-400 Mini Flex Package	M820M
MAVOWATT 270-400 including accessories (see above) and the following current clamps: 4 TR2510B (1 … 10 A)	MAVOWATT 270-400 TR2510B Package	M820Q

MAVOWATT 230 / 240 / 270 / 270-400 Accessories

	Designation	Type	Article
Rechargeable Battery and Power Pack			
 BP-HDPQ	Rechargeable battery pack for MAVOWATT 230 / 240 / 270	BP-HDPQ	Z802A
	External battery charger, 250 V / 125 V for MAVOWATT 230 / 240 / 270	XBC-HDPQ-EU	Z802L
	Power pack for MAVOWATT 230 / 240 / 270	PS-HDPQ	Z802C
Measurement Cables and Clips			
 VCS-HDPQ	Measurement cable set consisting of 8 measurement cables (4 white, 4 black) 8 alligator clips (4 white, 4 black), 4 jumper cables and cable markings	VCS-HDPQ	Z802D
	Jumper cable, 25 cm	114013-G1	Z802E
	White alligator clip, 600 V CAT III / 1000 V CAT II	901962	Z802F
	Black alligator clip, 600 V CAT III / 1000 V CAT II	901794	Z802G
Communication			
 USB – Bluetooth	GPS receiver with magnetic retainer for the antenna	GPSMAKIT-HDPQ	Z802H
	Adapter, USB to Bluetooth 2.1, class 1	USB – Bluetooth	Z802I
Pouches and Cases			
 ENCL-HDPQ-EU	Practical carrying pouch for measuring instrument, current clamps, measuring accessories and much more	SCC MAVOWATT	Z802J
	Weather-proof protective case for outdoor use. Dimensions: 42.5 x 30 x 20 cm	ENCL-HDPQ-EU	Z802K
	Case with IP 65 protection, dimensions: 46.9 x 35.7 x 17.8 cm	LPC-HDPQ-EU	Z802M

MAVOWATT 20

Three-Phase Energy and Power Analyzer per IEC 61000-4-30, Edition 3, Class A







With Software

Applications

The MAVOWATT 20 mains and power analyzer acquires power, demand and energy, and it calculates consumption costs as well as CO_2 footprint.

Harmonics and RMS voltage dips can also be recorded for the purpose of mains evaluation.

DC coupled measurement inputs make it possible to determine the efficiency of photovoltaic inverters.

Channel D is laid out as a differential input for measuring voltage between the neutral conductor and protective earth.

Recording of energy exported to and imported from the grid has proven especially advantageous within a setting of alternative energy concepts.

Customer Benefits

- Acquisition of energy consumption and costs
- Ascertainment of CO_2 footprint
- Determination of inverter efficiency
- Uninterrupted recording of all mains-relevant parameters
- Measurement possible at 2 systems: AC/DC
- Monitoring of energy flow direction
- Evaluation with DranView Professional for MAVOWATT 20
- Printout of comprehensive, customer-specific reports
- Compatible with DranView7

Technical Data, MAVOWATT 20

- Dimensions: 203 x 300 x 64 mm
- Weight: 1.8 kg
- Operating temperature: 0 to +50 °C
- Storage temperature: -20 to +50 °C
- Relative humidity: 10 to 90%, no condensation
- System time: system clock with quartz movement, resolution: 1 second
- Power pack / battery charger: 90 to 264 V_{AC}, 47 to 63 Hz
- Battery operation time: 2 hours
- Display: LCD, color touch-screen, 12 x 9.5 cm
- Data storage: High-speed compact flash, 4 GB

Languages

- European version includes: English, French, Finnish, German, Italian, Polish, Spanish and Swedish
- Asian version includes: English, Chinese (simplified and traditional), Japanese, Korean and Thai

Functions and Conformity

- IEC/EN 61000-4-7, harmonic analysis
- ISO 5001, energy management system
- IEEE 1159 PQ guideline, events identification
- Continuous data logging of all measured quantities with min., max. and mean values within specified intervals
- Acquisition and recording of voltage dips/swells with time stamp and characteristic values

SCOPE OF DELIVERY:

- Energy and power analyzer including a complete set of measurement cables
- Rechargeable battery and charger
- CF memory card, 4 GB
- Factory calibration certificate
- DranView Professional software
- Carrying pouch

MAVOWATT 30

Three-Phase Energy and Power Disturbance Analyzer per IEC 61000-4-30, Edition 3, Class A



With Software

DranView7

Applications

MAVOWATT power quality analyzers are class A devices (2008) which simultaneously monitor TRMS values, harmonics, flicker and transients down to a time range of approximately 80 µs. The measuring configuration and the type of electrical circuit is selected automatically based on detected measured quantities. Acquired data are stored to a CF memory card and can be transferred to DranView for further processing.

CUSTOMER BENEFITS

- Simple control per EN 50160, EN 61000-4-7 and EN 61000-4-15
- Simple monitoring of energy costs
- Simple handling, automatic detection of electrical system types
- Automatic analysis/evaluation of measurement results in a matter of just seconds
- Automatic report generation with ultramodern PC software
- Automatic setup wizard

MAVOWATT 30:

- 8 measurement inputs, 4 voltage (differential),
- 4 current (current transformer), for measurement with line frequencies of 45 to 65 Hz and 16⅔ Hz
- Storage of data to compact flash card, up to 32 GB
- Power supply via charger (90 ... 264 V/ 47 ... 63 Hz) or via the integrated rechargeable battery for up to 2 hours

SCOPE OF DELIVERY:

- Energy and power analyzer including a complete set of measurement cables
- Rechargeable battery and charger
- CF memory card, 4 GB
- Factory calibration certificate
- DranView Professional software
- Carrying pouch

MAVOWATT 20 / 30

Overview

Instrument	MAVOWATT 20	MAVOWATT 30
APPLICATION / FUNCTION		
Mains analysis per EN 50160	–	■
Voltage quality measuring method	–	IEC 61000-4-30, Ed. 3, IEEE 1159
Energy / load tests / examinations	■	■
Extended load disturbance and asymmetry	–	–
Frequency measuring range	16⅔, 50 – 60 Hz	16⅔, 50 – 60 Hz
Errors recording / in-rush	–	–
Motor testing	–	–
Data logging	■	■
Harmonic analysis up to the 63rd harmonic (IEC61000-4-7, IEEE519)	■	■
Flicker per IEC 61000-4-15, IEEE1453	–	■
Acquisition of fast transients	–	≥ 80 µs
AnswerModules (motor state, capacitance switching, voltage dip)	–	–
Measurement inputs	“Common reference”	Differential
Demand and energy reports	■	■
Monitoring modes	2	4
Pre/error/post-cycles	0	100
Languages	11	11

MAVOWATT 20 / 30 Packages

Designation	Type	Article
Instrument including set of measurement cables, rechargeable battery, charger, 4 GB CF memory card, factory calibration certificate, DranView 7 Professional software and carrying pouch	MAVOWATT 20	–
MAVOWATT 20 incl. acc. (see above) and the following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 20 Flex Package	M810B
MAVOWATT 20 incl. acc. (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 20 Mini Flex Package	M810C
MAVOWATT 20 including accessories (see above) and the following current clamps: 4 TR2500B (10 … 500 A)	MAVOWATT 20 TR2500B Package	M817Q
MAVOWATT 20 including accessories (see above) and the following current clamps: 4 TR2510B (1 … 10 A)	MAVOWATT 20 TR2510B Package	M817R
MAVOWATT 20 including accessories (see above) and the following current clamps: 4 TR2550B (1...100 A)	MAVOWATT 20 TR2550B Package	M817T
MAVOWATT 20 including same accessories as with MAVOWATT 20 flex package plus PR150/SP2B AC/DC current clamp, 150 A, battery powered, 9 V	MAVOWATT 20 PR150/SP2B Package	M810D
MAVOWATT 20 including same accessories as with MAVOWATT 20 flex package plus PR1500/SP8B current clamp, 1500 A, battery powered, 9 V	MAVOWATT 20 PR1500/SP8B Package	M810E
Instrument including set of measurement cables, rechargeable battery, charger, 4 GB CF memory card, factory calibration certificate, DranView 7 Professional software and carrying pouch	MAVOWATT 30	–
MAVOWATT 30 incl. acc. (see above) and the following flexible current sensors: 1 METRAFLEX 3003XBL, 1 METRAFLEX 3001XBL	MAVOWATT 30 Flex Package	M810F
MAVOWATT 30 incl. acc. (see above) and the following miniature current sensors: 4 METRAFLEX 300MXBL (3/30/300 A)	MAVOWATT 30 Mini Flex Package	M810G
MAVOWATT 30 including accessories (see above) and the following current clamps: 4 TR2500B (10 … 500 A)	MAVOWATT 30 TR2500B Package	M810H
MAVOWATT 30 including accessories (see above) and the following current clamps: 4 TR2510B (1 … 10 A)	MAVOWATT 30 TR2510B Package	M810I

MAVOWATT 20 / 30 Accessories

	Designation	Type	Article
Rechargeable Battery and Power Pack			
 BP-PX5	Power pack for MAVOWATT20 / 30	117029-G1	Z801A
	External battery charger	XBC-PX5	Z818K
	Rechargeable battery pack	BP-PX5	Z818G
Measurement Cables and Clips			
 4 mm adapter	Measurement cable set consisting of 8 measurement cables (1 red, 1 yellow, 1 blue, 1 gray and 4 white) 8 alligator clips (4 red and 4 black, 600 V CAT III) and 4 jumper cables	16042-G3	Z802B
	Same measurement cable set as above (Z802B), alligator clips, 1000 V CAT III	116042-G7	Z803I
	Measurement cable set consisting of 6 measurement cables (1 red, 1 yellow, 1 blue, 1 gray and 2 white), 6 alligator clips (4 red and 2 black, 600 V CAT III) and 1 jumper cable	116042-G6	Z803C
	Same measurement cable set as above (Z803C), alligator clips, 1000 V CAT III	116042-G8	Z803H
 ISOFLEX-MHXL	Fused measurement cable set for measuring applications consisting of 4 measurement cables with 4 mm safety plugs and 4 alligator clips (3 black and 1 blue), 600 V CAT III / 1000 V CAT II, approx. 2.30 m long, fuse adapter (500 mA / FF / 700 V_{AC}).	3-phase fused cable set	Z818O
	Jumper cable, 25 cm	114013-G1	Z802E
	White alligator clip, 600 V CAT III / 1000 V CAT II	900371	Z803E
	Black alligator clip, 600 V CAT III / 1000 V CAT II	900372	Z803F
	Adapter for current clamps with 4 mm safety plugs	4 mm adapter	Z817T
	Power supply with two isolated outputs for flexible sensors	ISOFLEX-MHXL	Z817M
	Distributor cable for connecting current clamp to ISOFLEX-MHXL	RR/PS/4A	Z818R
Communication			
 COMM-OUA	RS 232 adapter with NodeLink software	COMM-RS 232	Z818A
	USB adapter with NodeLink software (COMM-RS232 and IR cable included)	COMM-OUA	Z818C
	Selected CF memory card, ≥ 4 GB	CFDATA-DB	Z818F
Pouches and Cases			
 SCC-4300	Weather-proof protective case for outdoor use. Dimensions: 42.5 x 30 x 20 cm	ENCL-HH	Z803G
	Carrying pouch for measuring instrument, current clamps and manuals	SCC-4300	Z818H
	Rugged transport container	RSC-4300	Z818L

ACCESSORIES

Current Sensors / Current Clamps

Designation		Type	Article
AC Current Clamp Sensors			
 TR-2510B TR-2500B	1 to 10 Arms, 40 Hz to 5 kHz, max. conductor dia.: 15 mm	TR-2510B	Z817A
	10 to 500 Arms, 40 Hz to 5 kHz, max. conductor dia.: 50 mm	TR-2500B	Z817B
	100 to 3000 Arms, 40 Hz to 5 kHz, max. conductor dia.: 72 mm	TR-2520B	Z817C
	100 mA to 1.2 Arms, 40 Hz to 5 kHz, max. conductor dia.: 15 mm	TR-2501B	Z817Y
	20 to 300 Arms, 30 Hz to 5 kHz, max. conductor dia.: 54 mm	TR-2530B	On request
	10 to 1000 Arms, 30 Hz to 5 kHz, max. conductor dia.: 54 mm	TR-2540B	On request
	1 to 100 Arms, 40 Hz to 10 kHz, max. conductor dia.: 15 mm	TR-2550B	Z817U
AC-DC Current Clamp Sensors			
 PR150/SP2B	150 A, 9 V battery operation	PR150/SP2B	Z817N
	1500 A, 9 V battery operation	PR1500/SP8B	Z817O
	150 A, operation via additional power pack (included in scope of delivery)	PR150/SP1B	Z817P
	1500 A, operation via additional power pack (included in scope of delivery)	PR1500/SP7B	Z817Q
	EURO power pack for PR150/SP1B or PR1500/SP7B	ACADP-PR9VEURO	Z817R
Extension Cords and Power Packs for Current Clamp Sensors			
 TREXT10	1.5 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT5	Z800A
	3 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT10	Z800B
	4.5 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT15	Z800C
	6 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT20	Z800D
	7.5 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT25	Z800E
	9 m extension cord for TR and PR series current sensors with Hypertronics plug	TREXT30	Z800F
Flexible AC Current Sensors			
 METRAFLEX 3001 XBL/24	30, 300, 3000 A, sensor length: 61 cm	METRAFLEX 3001 XBL/24	Z207O
	30, 300, 3000 A, sensor length: 91 cm	METRAFLEX 3001 XBL/36	Z207R
	30, 300, 3000 A, sensor length: 122 cm	METRAFLEX 3001 XBL/48	Z207S
	30, 300, 3000 A, sensor length: 61 cm	METRAFLEX 3003 XBL/24	Z207P
	30, 300, 3000 A, sensor length: 91 cm	METRAFLEX 3003 XBL/36	Z207W
	30, 300, 3000 A, sensor length: 122 cm	METRAFLEX 3003 XBL/48	Z207X
 METRAFLEX 3003 XBL/24	60, 600, 6000 A, sensor length: 61 cm	METRAFLEX 6001 XBL/24	Z461A
	60, 600, 6000 A, sensor length: 91 cm	METRAFLEX 6001 XBL/36	Z461B
	60, 600, 6000 A, sensor length: 122 cm	METRAFLEX 6001 XBL/48	Z461C
	60, 600, 6000 A, sensor length: 61 cm	METRAFLEX 6003 XBL/24	Z463A
	60, 600, 6000 A, sensor length: 91 cm	METRAFLEX 6003 XBL/36	Z463B
	60, 600, 6000 A, sensor length: 122 cm	METRAFLEX 6003 XBL/48	Z463C
Miniature AC Current Sensors			
 METRAFLEX 300MXBL/2	3, 30, 300, sensor length: 16 cm	METRAFLEX 300MXBL/2	Z207Q
	3, 30, 300, sensor length: 22 cm	METRAFLEX 300MXBL/3	Z207Y
	3, 30, 300, sensor length: 31.5 cm	METRAFLEX 300MXBL/4	Z207Z

LINAX PQ5000-MOBILE

Portable, Programmable 3-Phase Energy and Power Disturbance Analyzer



Applications

Portable analyzers are the right choice wherever data concerning power quality, power and energy need to be simply and accurately ascertained. The instrument detects changes in the monitored electrical circuit: voltage dips and swells, overvoltage, harmonics and flicker based on internationally recognized industry standards such as EN 50160, IEC 61000-2-2, IEC 61000-2-4 and IEC 610002-12, as well as GB/T (China) and IEEE 519.

Ethernet and Wi-Fi interfaces are available for remote use in safety-critical environments, via which the instrument can be operated directly from a web browser at a cell phone, tablet or laptop.

Customer Benefits

- Statistical evaluation (power quality)
- Disturbance logging (power availability)
- Evaluation of changes / measures for improvement
- Acquisition of load profiles, short-term load peaks and meter readings
- Integrated Wi-Fi
- Lockable, water-proof case
- Simple, device-independent initial start-up and configuration via web browser
- No additional software required thanks to integrated power quality reporting function (PQEasy Report)

Compliance with the Standards

Amongst others, the instruments fulfill all requirements specified in edition 3 of the IEC 61000-4-30 measuring instrument standard for “class A instruments”, as well as IEC 61000-4-7 (measuring procedures for harmonics) and IEC 61000-4-15 (flicker meters).

This permits legally secure recording of the limit values stipulated in EN 50160 (voltage characteristics of electricity supplied by public distribution networks), e.g. for voltage quality.

Independent certification by the Swiss Federal Institute of Metrology, device type PQI-A FI2 in accordance with IEC 62586-1.

Thanks to certification in accordance with IEC 62586-2 (standard for verifying compliance with IEC 61000-4-30), the instrument can be used as a reliable and comparable source of information for regulatory authorities, for negotiations with power utilities and for internal quality control.

SCOPE OF DELIVERY:

- PQ5000- MOBILE power quality analyzer
- 5 voltage measurement cables and plug-on dolphin clips
- Mains power pack with plug set
- Dongle for Wi-Fi access point
- Carrying pouch
- Instrument manual (English or German) including test report

Type	Article
LINAX PQ5000 MOBILE	PQ5000MOB-

Please note: Measurements are performed with the PQ5000 Mobile by means of either Rogowski coils (order number: PQ5000MOB-3) or current clamps (order number: PQ5000MOB-2). It’s not possible to change from one type of measurement to the other.

LINAX PQ3000

Certified Class A Power Quality Analysis in Accordance with IEC 61000-4-30, Edition 3



The LINAX PQ3000 combines the features of a standards-based power quality measuring instrument with functions for comprehensive energy consumption and network status analysis. It's distinguished by the quality of its display and intuitive operation.

The modern, multilingual design and the high resolution color TFT display support the user during on-site data analysis. The integrated web server permits remote querying of measurement data and the instrument's parameters configuration. The instrument makes broad-ranging functionality available to the user, which can be further expanded with optional components.

Product Highlights:

- Certified class A power quality analysis in accordance with IEC 61000-4-30, edition 3
- Standardized data format for power quality data: PQDIF
- Energy consumption analysis, class 0.5S (meters, load profiles, trend analysis)
- EN 50160 conformity report via SMARTCOLLECT PM20
- On-site events display
- Direct measurement up to 690 V, CAT III
- Generation of standards-compliant reports with PQ-Easy Report
- Network status monitoring
- Limit value monitoring with alarm generation
- Universal process I/O
- Graphic measured value displays
- High resolution, color TFT display

Options:

- Modbus-RTU interface
- Up to three I/O expansions are possible
- Uninterruptible power supply (UPS)

SCOPE OF DELIVERY:

- Test instrument
- Mounting kit: 2 mounting clips
- Rechargeable battery (option, only with instruments which include UPS)

Type	Article
LINAX PQ3000	PQ3000-

LINAX PQ5000

Certified class A power quality analysis in accordance with IEC 61000-4-30, edition 3



The LINAX PQ5000 combines the features of a standards-based power quality measuring instrument with functions for comprehensive energy consumption and network status analysis.

The integrated web server permits remote querying of measurement data and the instrument's parameters configuration. The instrument makes broad-ranging functionality available to the user, which can be further expanded with optional components.

Product Highlights:

- Certified class A power quality analysis in accordance with IEC 61000-4-30, edition 3
- Standardized data format for power quality data: PQDIF
- Energy consumption analysis, class 0.5S (meters, load profiles, trend analysis)
- EN 50160 conformity report via SMARTCOLLECT PM20
- On-site events display (with optional TFT display)
- Direct measurement up to 690 V, CAT III
- Generation of standards-compliant reports with PQ-Easy Report
- Network status monitoring
- Limit value monitoring with alarm generation
- Universal process I/O
- Graphic measured value displays (with optional TFT display)

Options:

- Modbus-RTU interface
- Up to three I/O expansions are possible
- Uninterruptible power supply (UPS)
- TFT display

SCOPE OF DELIVERY:

- Test instrument
- Rechargeable battery (option, only with instruments which include UPS)

Type	Article
LINAX PQ5000	PQ5000-

MAVOWATT 4

Multiple Power Meter



Multiple power meter for direct measurement of DC power, as well as RMS power measurement for single-phase alternating current and balanced load three-wire, three-phase current

Benefits:

- Determination of reactive power
- Measurement of phase-to-phase voltage(s)
- Ideal instrument for training facilities
- Phase sequence indicator
- cos φ measurement

SCOPE OF DELIVERY:

- Test instrument
- Batteries

OPTIONAL ACCESSORIES:

- Factory calibration certificate

Type	Article
MAVOWATT 4	GTM3033000R0001

Additional items and accessories, for example PQ current transformers, can be found in the “Industrial Measuring Technology” catalog and on our website.

TEST INSTRUMENTS 03

Protective measures in electrical systems are intended to prevent bodily injury due to accidents involving electrical current.

Property damage caused by electrical power should of course be prevented as well. And thus all electrical installations should be checked with our test instruments before initial start-up, and at regular intervals thereafter, in order to assure the effectiveness of installed protective measures.

For the most part, this involves testing in accordance with the following regulations: IEC 60364-6, IEC 62446, EN 50110-1, DIN EN 61439-1, DIN EN 60204-1 and DIN EN 61851-1.

Testing itself is conducted using instruments which are in strict compliance with the standards, in particular EN 61557.

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PROFITEST MASTER

For testing the effectiveness of safety measures in electrical systems in accordance with DIN IEC 60364-6 / EN 50110-1



PROFITEST MXTRA IQ
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PROFITEST MTECH+ IQ
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PROFITEST MPRO IQ
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PROFITEST INTRO PROFISIM 1 / 2

Tester / simulators
IEC 60364-6 / EN 50110-1



PROFITEST INTRO
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PROFISIM 1
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PROFISIM 2
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PROFITEST H+E XTRA, XTRA C / H+E BASE, BASE 32, BASE C / H+E TECH / E-MOBILITY

Measuring instrument, tester and diagnostics device for e-mobility / PRO-TYP I and II test adapters



PROFITEST H+E XTRA / C
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PROFITEST H+E BASE / 32 / C
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PROFITEST H+E TECH
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PROFITEST E-MOBILITY
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PRO TYP I / II ADAPTER
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PROFITEST PV 1500, PV SUN / MEMO

Photovoltaics
Peak power measuring instrument and curve tracer for PV modules and strings



PROFITEST PV 1500
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PROFITEST PV SUN / SUN MEMO
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PROFITEST PRIME (AC)

All-in-one test instrument in AC and DC networks for electrical systems, machines, switchgear, industrial equipment, wind power turbines, power generators and e-mobility
EN 60204-1 / DIN EN 61439-1



PROFITEST PRIME
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PROFITEST PRIME AC
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METRISO

Insulation and low resistance measuring instruments



METRISO INTRO / BASE / TECH
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METRISO XTRA
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METRISO PRO
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METRISO 5024
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METRISO, METRAOHM

Insulation and low resistance measuring instruments



METRISO PRIME
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METRISO PRIME+
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METRISO PRIME 10
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METRAOHM 413
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METRALINE RLO CHECK
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GEOHM, PROFITEST MPRO, METRACLIP EARTH

Earth Testers



GEOHM C
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GEOHM PRO / XTRA
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GEOHM 5
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PROFITEST MPRO IQ
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METRACLIP EARTH
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METRAPHASE, PROFISAFE, DUSPOL, METRAVOLT

Phase sequence indicators, voltage testers



METRAPHASE 1
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PROFISAFE 690
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DUSPOL
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METRAVOLT 12D+L
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METRAVOLT VT 1500
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CURRENT CLAMP METERS

METRACLIP 41 / 410
METRACLIP 61 / 62 / 63 / 64
METRACLIP 85 / 86 / 87 / 88



METRACLIP 41
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METRACLIP 61
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METRACLIP 64
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METRACLIP 87
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METRACELL BT PRO, METRACABLE TDR PRO, METRAFUSE FD PRO

Test instruments for maintenance and repair



METRACELL BT PRO
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METRACABLE TDR PRO
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METRAFUSE FD PRO
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MICROOHMMETER

MICRO CENTURION II, TR MARK III, T-REX, TR-1, WR14, WR50, WR100



MICRO CENTURION II
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T-REX / T-REX R
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WR50-12/13
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WR100-12R
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PROFITEST MASTER

IEC 60364-6 / EN 50110



For testing the effectiveness of safety measures in electrical systems in accordance with EN 50110 / IEC 60364-6, for use in all alternating and 3-phase electrical systems with voltages from 65 to 500 V and frequencies of 15.4 to 420 Hz

Low-resistance, insulation, earth resistance, standing-surface insulation, loop and line impedance measurements, as well as testing of RCDs, RCMs, IMDs, PRCDs and charging stations.

Features:

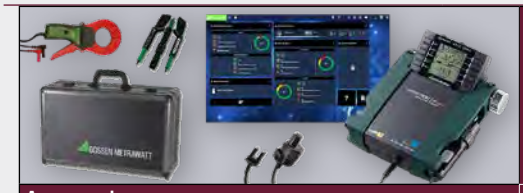
- CAT IV
- DAkkS calibration certificate
- Bidirectional data exchange via USB
- AMC – automatic measurement cable compensation using 4-wire method
- 2-pole measurements with plug insert or interchangeable 2/3-pole adapter
- Help menu with wiring diagrams
- Connection of an RFID reader or a barcode scanner
- Bidirectional data exchange with DDS-CAD / ep INSTROM planning software
- Free firmware updates with the master updater
  Advantage: adaptation to changing standards and expanded functions
- Registration at myGMC (www.gossenmetrawatt.com)
  Advantages (amongst others):
  - Protection against theft after registering your serial number
  - Free download of current firmware and information concerning changes to standards

Applications:

- Loop measurement without tripping the RCD
- RCD test with continuously rising ramp
- Voltage drop measurement
- 1 mA varistor response test with insulation measuring voltage up to 1000 V
- Display of approved fuse types for electrical systems
- Energy meter start-up testing
- Calculation of cable lengths for common copper wire cross-sections
- Leakage and equalizing current of up to 1 A, as well as working current of up to 150 A, can be measured with the W Z12C current clamp
- Phase sequence measurement (including highest line-to-line voltage)
- SRCDs, PRCDs (Schukomat, Sidos and others), types A, AC, B, B+, EV, F, G/R
- Testing of RCD protection in IT systems
- Insulation measurement with rising voltage
- Current measurement with Metraflex (option)
- Creation of test sequences
- E-mobility – testing of charging stations per IEC 61851 with PRO-TYP I / II, test box or test instruments from Mennekes, Walther and Hensel

TESTING PACKAGES

IEC 60364-6 / EN 50110



Accessories	Page	Article No.	Starter Package TECH+ IQ M536A	TECH+ IQ Master Package M536G	XTRA IQ Starter Package M536C	XTRA IQ Master Package M536D	XTRA IQ MED Package M536E	XTRA IQ Professional Package M536F
		Packages						
PROFITEST MTECH+ IQ	03 - 4	M535B	■	■	–	–	–	–
PROFITEST MXTRA IQ	03 - 4	M535D	–	–	■	■	■	■
SP500 earth drill	03 - 24	Z503Z	–	■	–	–	–	–
TR50 drum	03 - 23	GTY1040014E34	–	■	–	–	–	–
VARIO plug set	03 - 24	Z500A	■	■	■	■	■	■
PRO-RLO II adapter	03 - 8	Z501P	–	■	–	■	■	–
Probe set	03 - 24	Z503F	■	■	■	■	■	■
PRO-AB leakage current measuring adapter	03 - 22	Z502S	–	–	–	–	■	–
E-Clip 2 generator clamp for earthing measurements	03 - 30	Z591B	–	–	–	–	–	■
Z3512A clamp meter for earthing measurements	03 - 23	Z225A	–	–	–	–	–	■
PRO-RE 2 measuring adapter for 2-clamp measuring method	–	Z502T	–	–	–	–	–	■
PRO-W Schuko angled plug insert	03 - 8	Z503A	–	■	–	■	–	■
F2000 universal carrying pouch	03 - 25	Z700D	–	–	–	–	–	–
Professional case	–	Z502W	–	■	–	■	■	■
Sortimo case with insert	03 - 25	Z503D	■	–	■	–	–	–
E-CHECK Case	03 - 25	Z502M	–	–	–	–	–	–
Rechargeable battery pack	03 - 23	Z502H	■	■	■	■	■	■
Charger	03 - 23	Z502R	■	■	■	■	■	■
IZYTRONIQ Business Advanced software	06 - 02	S102V	■	–	■	–	■	–
IZYTRONIQ Business Professional software	06 - 02	S103V	–	■	–	■	–	■

PROFITEST MASTER

Overview

.IQ

SCOPE OF DELIVERY:

- Test Instrument
- Earthing contact plug insert (PRO-Schuko)
- 2-pole measuring adapter and cable for expansion into a 3-pole adapter (PRO-A3-II)
- Alligator clips
- Set of rechargeable batteries and charger
- DAkkS calibration certificate
- IZYTRONIQ Business Starter software
- USB cable

PROFITEST Master Test Instruments

Type	Article
PROFITEST MTECH+ IQ	M535B
PROFITEST MPRO IQ	M535C
PROFITEST MXTRA IQ	M535D

The PROFITEST APP / PROFISCAN

DESIGN PLUS powered by: light+building

product design award 2009

IZYTRON .IQ

IZYTRONIQ software including:

Measuring and test instruments with IQ work more intelligently, can be used more flexibly, can deal with additional types of objects and support innovative test functions.

IZYTRONIQ not only automatically detects and manages interconnected test instruments, it also queries the test instrument's respective scope of functions.

IZYTRONIQ makes it possible to use measuring and test instruments in an entirely new way for multiple applications. Simplified import and export of test data, synchronization of memory structures and convenient generation of test reports are just a few of the high-performance features.

Characteristics / Features	PROFITEST MTECH+ IQ	PROFITEST MPRO IQ	PROFITEST MXTRA IQ
RCD measurements			
UB measurement without tripping the RCCB	■	■	■
Tripping time measurement	■	■	■
Tripping current measurement	■	■	■
Selective, SRCDs, PRCDs, types A, AC, G/R and F, EV (PROFITEST MTECH+, MXTRA)	■	■	■
AC/DC sensitive RCDs – type B, type B+, RDC-DD	■	–	■
Testing of insulation monitoring devices (IMDs)	–	–	■
Testing of residual current monitoring devices (RCMs and RCMBs)	–	–	■
Testing for N-PE reversal	■	■	■
Loop impedance Z_{L-PE} / Z_{L-N}			
Fuse table for systems without RCDs	■	■	■
Without tripping the RCD, fuse table	■	–	■
With 15 mA test current*, without tripping the RCD	■	■	■
Earth resistance R_E			
I-U measuring method, mains operation (2/3-wire measuring method via measuring adapter: 2-wire / 2-wire + probe)	■	■	■
Earth resistance R_E (battery operation), 3 or 4-wire measuring method via PRO-RE adapter	–	■	■
Soil resistivity ρ_E (battery operation) 4-wire measuring method via PRO-RE adapter	–	■	■
Selective earth resistance R_E (mains operation) with 2-pole adapter, probe, earth electrode and current clamp sensor (3-wire measuring method)	■	■	■
Selective earth resistance R_E (battery operation) with probe, earth electrode and current clamp sensor (4-wire measuring method via PRO-RE adapter and current clamp sensor)	–	■	■
Earth loop resistance R_{ELOOP} (battery operation) 2 clamps (current clamp sensor direct and current clamp transformer via PRO-RE/2 adapter)	–	■	■
Measurement of equipotential bonding R_{LO}			
Automatic polarity reversal	■	■	■
Insulation resistance R_{INS}			
Variable or rising test voltage (ramp)	■	■	■
Voltage measurement,			
U_{L-N} / U_{L-PE} / U_{N-PE} / f	■	■	■
Special measurements			
Leakage current (clamp measurement) I_L, I_{AMP}	■	■	■
Meter start-up	■	■	■
Phase Sequence	■	■	■
Voltage drop	■	■	■
Standing-surface insulation Z_{ST}	■	■	■
Earth leakage resistance $R_{E\ (INS)}$	■	■	■
Leakage current with PRO-AB adapter	–	–	■
Residual voltage test	–	–	■
Intelligent ramp	–	–	■
Testing of charging stations per IEC 61851	■	–	■
Features			
Selectable user interface language	■	■	■
Memory (database for up to 50,000 objects)	■	■	■
Automatic test sequence function	■	■	■
Interface for RS 232 RFID/scanner	■	■	■
USB port for data transmission	■	■	■
Interface for *Bluetooth*®	■	–	■
IZYTRONIQ user software	■	■	■
Measuring category: 600 V CAT III / 300 V CAT IV	■	■	■
DAkkS calibration	■	■	■

* The so-called live measurement is only advisable if there is no bias current within the system. Only suitable for motor protection switches with small nominal current.

PROFITEST INTRO

Test instrument for IEC 60364-6 / EN 50110-1



PROFITEST INTRO



PROFITEST INTRO Starter Package



PROFITEST INTRO Master Package

The PROFITEST INTRO provides professional electricians with a universal, compact and rugged, state-of-the-art measuring tool.

The test instrument is capable of executing all measurements for testing the effectiveness of safety measures in electrical systems as required by IEC 60364-6 and other country-specific standards, and as specified in the individual sections of DIN EN 61557.

Thanks to its intelligent and ergonomic design, intuitive operation and an advanced technical concept, it's aligned consistently to routine daily tasks making it the ideal companion for any electrician.

Benefits

- Tester for testing safety measures in electrical installations per IEC 60364-6
- Measurement of R_{LO}, Z_{L-PE}, Z_{L-N}, R_{ISO}, R_E, ΔU, phase sequence and voltage
- Testing of RCD types A, AC, F, B, B+, EV, MI and G/R, as well as SRCDs and PRCDs
- Individual measured value memory and memory structure setup
- Bidirectional data exchange via USB port, epINSTROM
- Measuring category: 600 V CAT III / 300 V CAT IV

Technical characteristics:

- Low-resistance measurement for protective and equipotential bonding conductors with automatic polarity reversal
- Measurement of internal system and fault loop impedance without tripping the RCD
- RCD test with continuously rising ramp, time to trip, tripping current
- Insulation measurement with rising ramp
- Varistor response test with rising ramp and variable test current
- Earthing resistance measurement
- Voltage measurement for U_N 120, 230 and 400 V, phase sequence
- Individual measured value memory for approx. 50,000 objects / measured values
- ETC software (Electrical Testing Center) for, amongst other functions, creating tree structures and documentation per ZVEH
- Connection of an RFID reader or a barcode scanner
- PRO-JUMPER for easy measurement cable compensation

SCOPE OF DELIVERY:

- Test instrument
- Shoulder strap
- Battery pack
- Cable set
- USB cable
- Factory calibration certificate
- Condensed operating instructions
- Supplementary sheet with safety information

PROFITEST INTRO Starter Package consisting of:

- PROFiTEST INTRO – test instrument for IEC 60364-6 / EN 50110-1
- PRO-Schuko measuring adapter – single-phase 230 V AC country-specific measuring adapter
- PRO jumper – touch-guarded country-specific short-circuit adapter for cable compensation
- Master battery pack – sealed battery pack consisting of 8 rechargeable batteries
- Charger – charger with 6.3 / 2.5 mm barrel plug with mains plug function – EU, GB
- F2010 universal carrying pouch – universal carrying pouch with flexible compartments and display protection

PROFITEST INTRO Master Package consisting of:

- PROFiTEST INTRO – tester for IEC 60364-6 / EN 50110-1
- PRO-Schuko measuring adapter – single-phase 230 V AC country-specific measuring adapter
- PRO jumper – touch-guarded country-specific short-circuit adapter for cable compensation
- Master battery pack – sealed battery pack consisting of 8 rechargeable batteries
- Charger – charger with 6.3 / 2.5 mm barrel plug with mains plug function – EU, GB
- Test probe with remote triggering
- Variable plug adapter – 3 self-retaining test probes for connection to, for example, CEE and Perilex sockets
- Probe set – special test probes, 600 V CAT III, for measurements in controllers
- SORTIMO L-BOXX – plastic system case with foam insert

Type	Article
PROFITEST INTRO	M520T
PROFITEST INTRO starter package	M503A
PROFITEST INTRO master package	M503B

PROFITEST H+E XTRA / XTRA C

Testing and Diagnosis of DC Charging Infrastructures



PROFITEST H+E XTRA C

Testing and diagnosis per DIN EN 61851-1/22/23/24, ISO 15118-1, IEC 60364-6, EN 50110-1

The PROFITEST H+E XTRA C is an EV diagnostics tester for CCS, CHAdeMo and AC.

The test instrument checks communication between the vehicle and the charging point, and simulates the charging process with DC source and load. The integrated measurement inputs are intended for the connection of an installation tester for checking the effectiveness of protective measures.

Features

- Graphic color display with intuitive touchscreen
- Interface for software connection and firmware updates
- Test/analysis standards:
  - CHAdeMO versions 0.9.1, 1.0.0., 1.0.1, 1.1
  - DC-CCS per DIN SPEC 70121 or ISO 15118-1
  - AC per EN 61851-1
- Electric vehicle simulation during communication for drawing EVSE charging current
- Electric vehicle simulation at DC load circuit, adapted to communication
- Read-out of measured values for direct voltage and direct current
- Read-out of communication progress
- Test sequence for detecting insulation faults
- Read-out of test results (past/failed) depending on charging variant
- Results reports can be downloaded as PDF files via USB read-out
- Rugged carrying case housing for mobile outdoor use including IP 67 protection with closed lid (IP 30 with open lid)

Electrical safety testing (measurement inputs as 4 mm safety sockets)

Testing is conducted with the
PROFITEST PRIME

- Measurement of low-resistance protective conductor continuity
- Measurement of DC loop resistance – Z loop
- IMD testing, shutdown in the event that the specified limit values are exceeded

PROFiTEST H+E XTRA C, article number M525M for CCS, CHAdeMo, AC

PROFiTEST H+E XTRA, article number M525N for CCS

SCOPE OF DELIVERY:

- 1 EV diagnostics tester
- 1 power cable
- 1 interface cable
- 1 set of operating instructions

Type	Article
PROFITEST H+E XTRA	M525N
PROFITEST H+E XTRA C	M525M

Standards-Compliant Testing and Diagnosis of DC Charging Infrastructures
Characteristics of Direct Current Charging via a Conductor per IEC 61851-24

Dissemination	Hardware Configuration	Communication Protocol
Japan	"System A" – DC charging per CHAdeMO	"Configuration AA" – CAN-based layer 1 communication protocol per CHAdeMO
China	"System B" – DC charging per GB/T plug 20234.3-2011	"Configuration BB" – CAN-based layer 1 communication protocol per GB/T standard
USA	"System C" – DC charging via type 1 or type 2 combo plug	"Configuration EE" – PLC-based layer 1 communication protocol via type 1 combo plug
EU		"Configuration FF" – PLC-based layer 1 communication protocol via type 2 combo plug

PROFITEST H+E BASE

Diagnostics Testers for Electric Charging Stations



PROFITEST H+E BASE
Test instrument for electric charging stations (connector socket and type 2 plug, earthing contact outlet)

PROFITEST H+E BASE 32
Test instrument for electric charging stations (type 2 connector socket, CEE outlet)

PROFITEST H+E BASE C
Test instrument for electric charging stations (type 1 and 2 connector sockets)

The test instrument is intended for examining the functional performance of charging stations for electric vehicles with type 2 connector socket (mode 3 charging).

The test instrument is connected to the charging station to this end, in order to document communication between the charging station and the test instrument.

If the charging process doesn't start, the source of error can be quickly pinpointed.

The range of applications includes R&D and service.

BENEFITS

- Complete diagnosis of electric charging stations with a single test instrument:
  - Vehicle states
  - Cable condition
  - Error states
  - PWM signal evaluation
  - Phases and phase sequence
  - Battery level
- Error simulations:
  - Short-circuiting of the diode in the vehicle's circuit
  - Short-circuit between CP and PE
  - Testing of the RCD by tripping and measuring breaking time
- Indication of states by means of easy-to-understand symbols
- Easy operation and diagnosis
- Compact, battery powered device, which is thus suitable for outdoor use

Features

- Connection option for a test consumer via an integrated earthing contact socket (230 V, max. 13 A)
- Compact case, ideal for service calls
- Large display, for which background illumination can be activated
- Selectable user interface language
- Power supply via 9 V (rechargeable) block batteries or power pack
- USB data interface:
  - For firmware updates
  - For transmitting diagnosis results to a connected PC

SCOPE OF DELIVERY:

- 1 PROFITEST H+E BASE test instrument
- 2 block batteries, 9 V
- 1 power pack, 12 V
- 1 set of operating instructions

Type	Article
PROFITEST H+E BASE	M525A
PROFITEST H+E BASE 32	M525C
PROFITEST H+E BASE C	M525D

PROFITEST H+E TECH

Diagnosis Tester Between the Electric Charging Station and the Vehicle



The test instrument is intended for examining the functional performance of charging stations for electric vehicles with type 2 connector socket (mode 3 charging).

The test instrument is connected between the charging station and the electric vehicle to this end, in order to document communication between the two.

If the charging process doesn't start, the source of error (charging station or electric vehicle) can be quickly pinpointed.

The range of applications includes R&D and service.

BENEFITS

- Complete diagnosis of electric charging stations and vehicles with a single test instrument:
  - Vehicle states
  - Cable condition
  - Error states
  - PWM signal evaluation
  - Phases and phase sequence
  - Battery level
- An electric vehicle can be simulated in order to diagnose a charging station.
- Indication of states by means of easy-to-understand symbols
- Easy operation and diagnosis
- Compact, battery powered device, which is thus suitable for outdoor use
- Displays communication between the charging station and the electric vehicle in real-time

Features

- Connection option for electric vehicles: OEM type 2 plug
- Compact case, ideal for service calls
- Large display, for which background illumination can be activated
- Selectable user interface language
- Power supply via 9 V (rechargeable) block batteries or power pack
- USB data interface:
  - For firmware updates
  - For transmitting diagnosis results to a connected PC

SCOPE OF DELIVERY:

- 1 PROFITEST H+E TECH test instrument
- 2 block batteries, 9 V
- 1 power pack, 12 V
- 1 set of operating instructions

Type	Article
PROFITEST H+E TECH	M525B

PROFITEST E-MOBILITY

Adapter for testing of mode 2 and 3, single and 3-phase charging cables



The PROFITEST E-Mobility is an adapter for standards-compliant testing of single and 3-phase, mode 2 and 3 charging cables with simulation of faults in accordance with manufacturer's specifications. The PROFITEST E-Mobility makes your investment decision easy because single and 3-phase, mode 2 and 3 charging cables can be quickly and reliably tested in accordance with manufacturer's specifications with the accessories which are perfectly matched to the requirements.

We recommend the following test instruments for testing charging cables with the PROFITEST E-MOBILITY test adapter:

- PROFITEST MTECH+ (IQ)
- PROFITEST MXTRA (IQ)
- PROFITEST PRIME
- SECUTEST (ST) PRO

Product Highlights

- Testing of mode 2 and 3, single and 3-phase charging cables
- Function test, i.e. tripping test by means of simulating the following faults: interruption, reversed wires and PE to phase
- Measurement of protective conductor current with current clamp transformer as accessory
- Measurement of protective conductor and insulation resistance with the PROFITEST MXTRA (IQ) / MTECH+ (IQ)
- Tripping test with nominal residual current and measurement of time to trip with the PROFITEST MXTRA (IQ) / MTECH+ (IQ)
- Evaluation and documentation of the individual test steps with the PROFITEST MXTRA (IQ) / MTECH+ (IQ)

Your Advantages

- Testing of charging cables in accordance with manufacturer's specifications using a guided test sequence with a recommended test instrument
- Testing of type 1, 2 and 3 charging cables
- Testing of connector cables with charging plug (type 1 plug etc.)
- Function test, i.e. tripping test by means of simulating the following faults: interruption, reversed wires and PE to phase
- Measurement of protective conductor current with current clamp transformer as accessory
- Measurement of protective conductor and insulation resistance with a recommended test instrument
- Tripping test with nominal residual current and measurement of time to trip with a recommended test instrument
- Evaluation and documentation of the individual test steps with a recommended test instrument
- Simulation of vehicle state per EN 61851-1
- Testing of resistance coding for vehicle inlets and vehicle connectors per EN 61851-1

SCOPE OF DELIVERY:

- Test adapter in case
- Mains power cable
- Operating Instructions

Type	Article
PROFITEST E-MOBILITY	M513R

PRO-TYP I / PRO-TYP II

Single Phase Test Adapter with Type 1 Plug / Single and 3-Phase Test Adapter with Type 2 Plug for Testing Electric Charging Stations with the PROFITEST MTECH+ and the MXTRA



PRO-TYP I Adapter



PRO-TYP II Adapter

Single-phase test adapter with type 1 plug for testing the effectiveness of protective measures at electric charging stations with the PROFITEST MTECH+ / MXTRA, simulation of fictitiously connected electric vehicles and current-carrying capacity of cord sets per IEC 61851-1

- **Vehicle simulation (CP)**
  Vehicle states A through E are selected with a rotary switch.
- **Cable simulation (PP)**
  with permanently wired cable coding
- **Fault simulation**
  simulation of a short-circuit between CP and PE by means of a rotary switch
- **Indication of phase voltages** via LED

Applications

Standard-compliant tests can be conducted at electric charging stations in accordance with IEC 61851 with the help of the PRO-Typ I in combination with the PROFITEST MTECH+ and MXTRA test instruments.

The test adapter triggers the charging process by simulating an electric vehicle. Only by means of simulation is the charging station's outlet energized so that it can be tested with the PROFITEST MTECH+ and MXTRA test instruments.

The range of applications includes R&D and service.

SCOPE OF DELIVERY:

- 1 PRO-TYP I or PRO-TYP II test adapter
- 1 set of operating instructions

OPTIONAL:

F2010 universal carrying pouch with flexible compartments

Type	Article
PRO-TYP I	Z525B
PRO-TYP II	Z525A
F2010	Z700G

METRALINE PRO-TYP EM I/II/III

Single and 3-Phase Test Adapters for Testing Electric Charging Stations with the PROFITEST MTECH+ and the MXTRA



METRALINE PRO TYP EM I Adapter



METRALINE PRO TYP EM II Adapter



METRALINE PRO TYP EM III Adapter

Single and 3-phase test adapter with type 2 plug for testing the effectiveness of protective measures at electric charging stations with the PROFITEST MTECH+ / MXTRA, simulation of fictitiously connected electric vehicles and current-carrying capacity of cord sets per IEC 61851-1

- **Vehicle simulation (CP):** vehicle states A through E are selected with a rotary switch.
- **Cable simulation (PP):** the various codings for charging cables with 13, 20, 32 and 63 A, as well as "no cable connected", can be simulated with the help of a rotary switch.
- **Fault simulation:** simulation of a short-circuit between CP and PE by means of a rotary switch
- **Indication of phase voltages** via LEDs: depending on the charging station, either one or three phases can be active.
- **Testing of electric charging stations** with permanently attached charging cable by means of an extended CP test pin
- **CP socket** for evaluating the PWM signal

Applications

Standard-compliant tests can be conducted at electric charging stations in accordance with IEC 61851 with the help of the PRO-Typ II in combination with the PROFITEST MTECH+ and MXTRA test instruments.

The test adapter triggers the charging process by simulating an electric vehicle. Only by means of simulation is the charging station's outlet energized so that it can be tested with the PROFITEST MTECH+ and MXTRA test instruments.

The range of applications includes R&D and service.

SCOPE OF DELIVERY:

- 1 METRALINE PRO-TYP EM I, II or III test adapter
- 1 set of operating instructions

OPTIONAL:

F2010 universal carrying pouch with flexible compartments

Designation	Type	Article
METRALINE PRO TYP EM I	Single and 3-phase test adapter with type 2 plug	Z525F
METRALINE PRO TYP EM II	Single and 3-phase test adapter with type 2 plug – same as PRO-TYP EM I with additional earthing contact socket	Z525G
METRALINE PRO TYP EM III	Single and 3-phase test adapter with type 2 plug – same as PRO-TYP EM II with additional interchangeable test plug (optional: type 1, Chinese plug)	Z525H
F2010	Universal pouch	Z700G

PROFISIM 1

Installation Board for Error Simulation



PROFISIM case with PROFISIM 1



Error Simulator with 12 Error Options via Switches

Installation board ("service line with main grounding busbar") for error simulation for measurements per IEC 60364-6 and EN 50110

The installation board is a compact building service line with main ground bus for consumer systems including a fault simulator.

It's used primarily for training sessions and project work covering all aspects of "testing systems in accordance with IEC 60364-6".

The board is equipped with all of the necessary modules of a building supply line including an extended main grounding busbar for the implementation of testing and fault options.

BENEFITS

- Service line with main grounding busbar
- External and internal lightning protection
- Earthing measurement
- TN/TT systems
- Simulation of faults via 12 switches
- Single and double fault selection
- Lockable fault switching panel
- Console-like housing
- Can be used as a benchtop device or in an experimentation frame

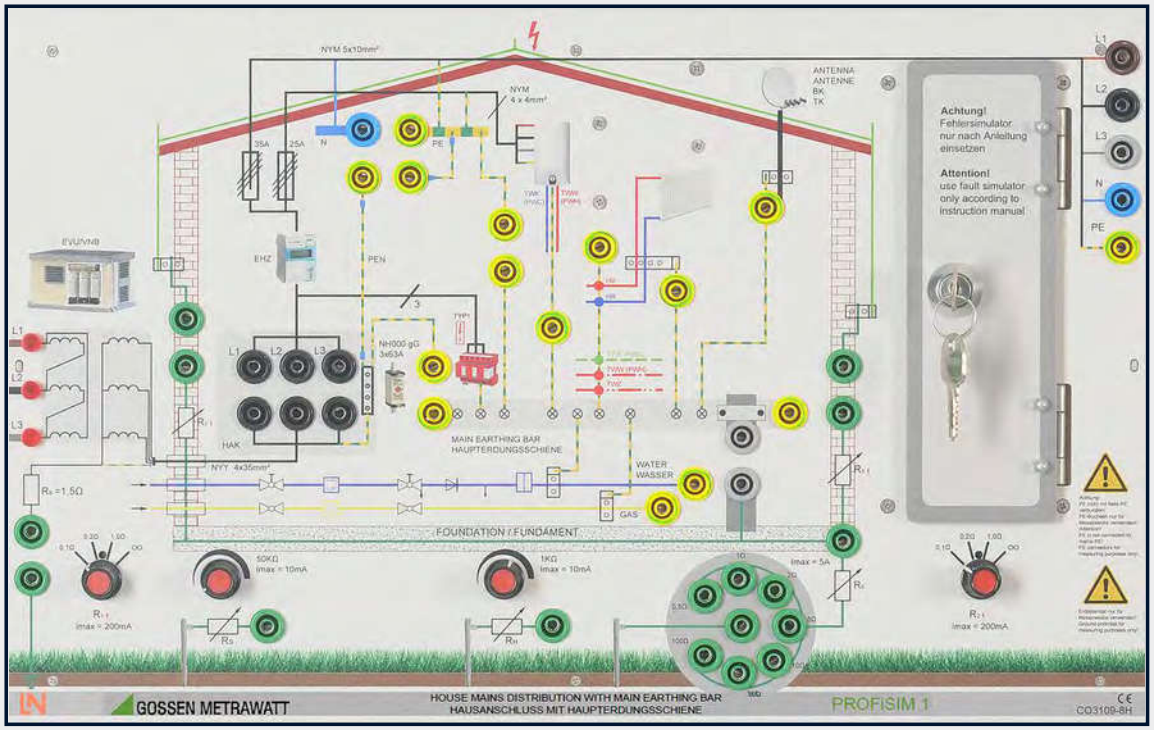
Content

- Simulation of a building service line with main service fuse
- Simulation of external and internal lightning protection
- Main ground bus with all important equipotential bonding cables and earth strips
- Implementation of various mains systems (TT, TN)
- Preparation of test reports in accordance with IEC 60364

SCOPE OF DELIVERY:

- 1 installation board
- 1 set of operating instructions
- 1 test regulation

Type	Article
PROFISIM 1	M560A
PROFISIM Case	Z560A



PROFISIM 2

Installation Board for Error Simulation



PROFISIM Case with PROFISIM 2



Fault Simulator with 25 Fault Options via Switches

Installation board ("sub-distribution branch with installation circuits") for error simulation for measurements per IEC 60364-6 and EN 50110

The installation board is a compact building service line with main ground bus for consumer systems including a fault simulator.

It's used primarily for training sessions and project work covering all aspects of "testing systems in accordance with IEC 60364-6".

The board is equipped with all of the necessary modules of a building supply line including an extended main grounding busbar for the implementation of testing and fault options.

BENEFITS

- Service line with main grounding busbar
- Simulation of faults via 25 switches
- Single and double fault selection
- Lockable fault switching panel
- Console-like housing
- Can be used as a benchtop device or in an experimentation frame

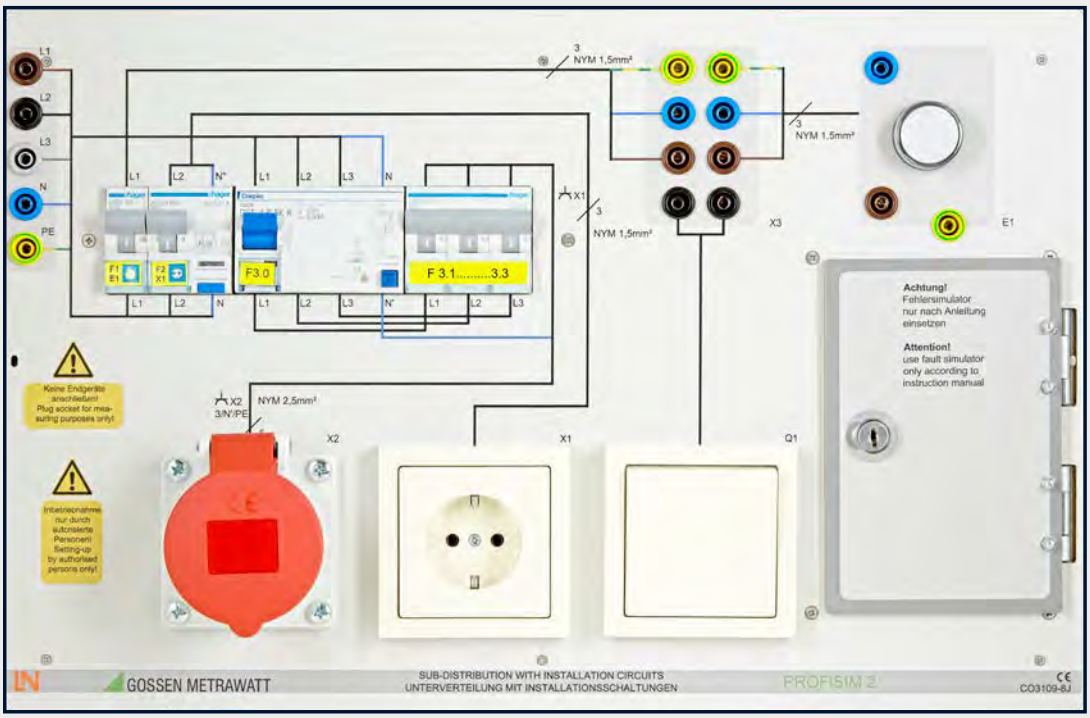
Content

- Simulation of a small sub-distribution branch with 3 electrical circuits
- Testing of various protective devices
- Main ground bus with all important equipotential bonding cables and earth strips
- Troubleshooting in installation circuits
- Preparation of test reports in accordance with IEC 60364

SCOPE OF DELIVERY:

- 1 installation board
- 1 set of operating instructions
- 1 test regulation

Type	Article
PROFISIM 2	M560B
PROFISIM Case	Z560A



PROFITEST PV / PV 1500

Photovoltaics





External Load Disconnector



Calibrated
Irradiation Sensor



External Pt1000 Temperature Sensor



4-Wire Measurement Cable Set, 10 m



External Power Pack



Case System for the PROFITEST PV
and Accessories



Case System for PROFITEST PV1500 Accessories

Peak Power Measuring Instrument and Curve Tracer for PV Modules and Strings

The **PROFITEST PV** allows for the measurement of characteristic IU curves, as well as individual photovoltaic modules and strings.

Features:

- Generator voltages of up to 1500 V_{DC}, current of up to 20 A_{DC} (*PROFITEST PV 1500)
- Measurement of short-circuit current ISC, open circuit voltage UOC, instantaneous peak power of a solar cell Pmax and series resistance RS
- Measurement of internal parallel resistance RP
- Automatic conversion of momentary measured values to STC
- Patented calculation process for evaluating PV generators without knowledge of the manufacturer's specifications
- Patented calculation process for determining the generator's internal series resistance based solely on a single characteristic IU curve
- Separate measurement of temperatures at the irradiation sensor and the back of the module for increased measuring accuracy
- High level of intrinsic safety thanks to included load disconnector for all-pole disconnection of the measuring instrument from the PV generator, 1000 V /32 A DC´ (PROFITEST PV), 1500 V /20 A DC (PROFITEST PV1500)
- Calibrated irradiation sensor in accordance with IEC/EN 60904-2 with integrated Pt1000 temperature sensor
- Integrated customer/module database with bidirectional data exchange
- Software for graphic representation, evaluation and documentation with integrated database / PV analyzer

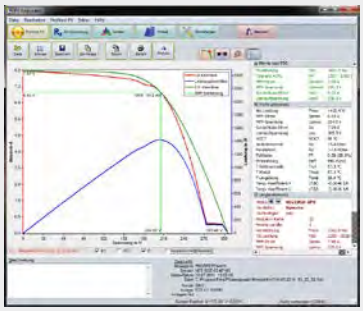
SCOPE OF DELIVERY:

- Test instrument
- Irradiation reference sensor with integrated Pt1000 temperature sensor, 10 m
- External safety disconnector, 1500 V* / 32 A (*PROFITEST PV 1500)
- 4-wire measurement cable set, 10 m
- Pt100 PV surface sensor
- External power pack

PV Analyzer

Software for visualization, evaluation and documentation of measured characteristic curve values with database.

The database software offers effective support for testing and documentation. It's been specially developed for use in the field of photovoltaics and allows for graphic representation and analysis of measurement results.



PV Analyzer includes the following functions and more:

- Measured characteristic curve values are read in from the **PROFITEST PV**.
- Export of measured values or results (e.g. as XLS file)
- Generation of a test report (e.g. as a PDF file)
- Online measurement – graphic representation of the characteristic curve and measured values (also suitable for continuous measurement)
- Online access to the database / data management in the **PROFITEST PV**
- Representation of measured and calculated values under STC
- Overview of characteristic IU curves for a given test series in the browser window
- Module database (approx. 40,000 modules)
- Analysis function: evaluation of measured values acquired under STCs (fault interpretation).

Type	Article
PROFITEST PV	M360A
PROFITEST PV 1500	M360F



PV1500 Color Display

ACCESSORIES FOR PROFITEST PV

Accessories



Trolley, Magnetic Test Probes, Adapter Sets, Measurement Cable

- **Trolley**
  for case system
- **Magnetic Test Probes**
  with MC4 plug



- **PV Adapter Set**
  MC3-MC4
- **PV Adapter Set**
  TYCO-MC4



- **PV Adapter Set**
  SUNCLIX-MC4
- **4-Wire Measurement Cable**
  25 Meter Connection

Type	Article
Trolley	Z502V
Magnetic test probes	Z502Y
MC3-MC4	Z360K
TYCO-MC4	Z360J
SUNCLIX-MC4	Z360H
4-wire measurement cable	Z360L

PROFITEST | PV SUN
PROFITEST | PV SUN MEMO

Test instrument



PROFITEST PV SUN



PROFITEST PV SUN MEMO



PROFITEST PV SUN-SOR

Test instrument for testing PV modules and strings per DIN EN 62446

- Voltage measurement: 0 ... 1000 V_{DC}
- Current measurement (direct): 0 ... 20 A_{DC}
- Insulation resistance measurement
- Measuring range: 0 ... 20 MΩ – test voltages: 250 V, 500 V, 1000 V DC
- Earth fault measurement 0 ... 1000 V_{DC}
- Testing for protective conductor continuity: 0 ... 10 Ω / > 200 mA
- Polarity test
- Backlit LCD panel
- Compact and rugged, for service calls under harsh conditions
- Weight: only 500 g

PV SUN MEMO – same as **PV SUN**

but with internal memory (10,000 measured values), bidirectional interface, software and USB interface cable

INCLUDED WITH THE PROFITEST PV SUN:

- 1 test instrument
- 4 batteries, 1.5 V IEC LR6 (AA)
- 3 safety measurement cables, 1.5 m, red, blue and yellow
- 1 solar plug adapter to MC3 and MC4
- 1 plug-on safety test probe with socket
- 1 plug-on safety alligator clip with socket
- 1 carrying case with foam insert + operating instructions

ACCESSORIES FOR PROFITEST PV SUN / PROFITEST PV SUN MEMO:

- **PROFITEST PV SUN-SOR (Z360N):** Sensor for irradiation, temperature and inclination

Type	Article
PROFITEST PV SUN	M360C
PROFITEST PV SUN MEMO	M360D
PROFITEST PV SUN-SOR	Z360N

PROFITEST PRIME

PROFITEST PRIME
PROFITEST PRIME AC

All-in-one test instrument in AC and DC networks for initial and periodic testing of electrical systems, machines, switchgear, industrial equipment, wind power turbines, power generators and e-mobility for IEC 60364-6, EN 50110-1, DIN EN 60204-1, DIN EN 61439-1, IEC 62446, IEC 61851-1



PROFITEST PRIME AC



PROFITEST PRIME AC

IZYTRON .IQ

Including IZYTRONIQ software:
Measuring and test instruments with IQ work more intelligently, can be used more flexibly, can deal with additional types of objects and support innovative test functions.

IZYTRONIQ not only automatically detects and manages interconnected test instruments, it also queries the test instrument's respective scope of functions.

IZYTRONIQ makes it possible to use measuring and test instruments in an entirely new way for multiple applications. Simplified import and export of test data, synchronization of memory structures and convenient generation of test reports are just a few of the high-performance features.

Versatile and future-proof
- Intuitive operation
- Efficient work
- Standards-compliant testing
- Legally secure documentation

Saves time and money
- A single test instrument for a broad range of applications
- All measurements without any bothersome replugging of the measurement cables
- Interchangeable test tips on the measurement cables
- Language genius – can be used all over the world

Up-to-date even in 10 years
- Future-proof thanks to firmware updates
- 10-year service guarantee
- DAkkS certificate issued by own calibration laboratory
- User support for questions about testing

Quick and easy report generation
- Cascadable, future-proof software concept
- Modern data management by means of customer and measurement data administration
- Creation of system structures – from the system all the way down to the measuring points
- Quick and easy generation of a legally secure report per ZVEH

Reliable measuring and testing
- Easy operation with rotary switch
- Predefined test sequences for structured testing
- Coded plugs assure error-free testing
- On-site help thanks to help function with wiring diagrams
- Measuring category: 600 V CAT III / 300 V CAT IV

Technical Characteristics
- Measurement in AC/DC systems up to 1000 V
- Measurement of internal line resistance and fault loop resistance with high test current up to 690 V AC / 800 V DC without tripping RCD types A and B
- Low-resistance measurement for protective and equipotential bonding conductors with 200 mA, automatic polarity reversal and 25 A
- Testing of RCD types A, AC, F, B, B+, EV, MI and G/R, as well as SRCDs and PRCDs
- Combined RCD test with continuously rising ramp, time to trip, tripping current
- Insulation measurement up to 1000 V with rising ramp
- Testing of RCMs and IMDs
- Measurement of leakage and differential current
- Measurement of temperature and humidity with a sensor
- Mains and battery operation (with limited functionality)
- Push-print function – transmission of the measured value after measurement
- Bluetooth and USB interfaces
- Circuit-dependent RLO table
- Testing of RDCs (RDCDD per IEC 62955 and RCMB per DIN EN 62752) – permits testing of time to trip of up to 10 s with 6 mA DC test current*
- Testing of type F-EV and F-Audio RCDs (logging only)*
- Interface expansion for PROFITEST Remote
- General process improvement

* Measuring function compatible with IZYTRONIQ software version 4.5 and higher

SCOPE OF DELIVERY:
- Test instrument in measuring case and accessories pouch with USB cable + mains power cable
- Condensed operating instructions, complete operating instructions for download from Internet
- DAkkS calibration certificate + safety data sheet

IZYTRONIQ Business Starter software

Type	Article
PROFITEST PRIME	M506A
PRIME starter package *	M506D
PRIME master package *	M506E
PRIME professional package*	M506F

* Further information concerning the packages can be found on our website.

PROFITEST PRIME AC – same as PROFITEST PRIME plus:



- 2.5 kV AC, 500 VA high-voltage test with PROFITEST PRIME AC (standard sequence, ramp function and pulse control mode)
- Work safety concept for the inspector in accordance with DIN EN 50191 and EN 61557-14 with indicator lamp, emergency stop switch and key switch, as well as 2 high-voltage pistols

Type	Article
PROFITEST PRIME AC	M506C

PROFITEST PRIME ACCESSORIES



I-SK4 / I-SK12



Temperature/Moisture Sensor



PROFITEST CLIP



Trolley



Barcode Reader

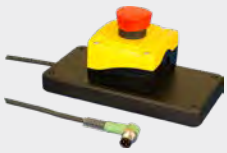
- Intelligent measuring probe with 4-wire connection. “active L” with START / STOP / SAVE, 4/12 m with multifunction LED and measuring point illumination
  - Interchangeable test probes
  - Test probes available in various lengths (e.g. SK4-L probe cable: 4 m)
- Adapter for measuring temperature and humidity with magnetic retainer and 5 meter connector cable
  - Connection to RS 232 port
- PROFITEST CLIP
  Clamp meter for leakage or fault current as of 0.1 mA, direct or differential current up to 25 mA
- Trolley for PROFITEST PRIME case system
- Barcode scanner with laser and coil cable laid out especially for the PROFITEST MASTER / INTRO / PRIME series
  (see PROFITEST MASTER accessories)

Type	Article
I-SK4-PROFITEST-PRIME	Z506T
I-SK4-PROFITEST-PRIME	Z506U
SK4-L	Z506L
SK4-N	Z506N
SK4-PE	Z506P
SK12-L	Z5060
SK12-N	Z506M
SK12-PE	Z506R
SK25-PE	Z506S
SK50-PE	Z516A
SK75-PE	Z516B
Replacement test probes PRIME	Z506Y
PRIME Cable Lug	Z506X
PROFITESTPRIME ADAPTER	Z506J
Temperature/moisture sensor	Z506G
PROFITEST CLIP	Z506H
Trolley for case system	Z506F
PRIME CASE	Z506A
Cable-connected barcode scanner	Z502F
TELEARM 120	Z505C
TELEARM 180	Z505D
Probe set	Z503F
PRO-PE Clip	Z503G

ACCESSORIES FOR PROFITEST PRIME AC



SIGNAL PROFITEST PRIME AC



STOP PROFITEST PRIME AC



HV-P PROFITEST PRIME AC



CLAIM PROFITEST PRIME AC

- Signal lamp combination for high-voltage testing per DIN EN 50191 and DIN EN 61557-14
  (5 meter connector cable)
- Emergency off switch for high-voltage testing per DIN EN 50191 and DIN EN 61557-14
  (5 meter connector cable)
- HV-P PROFITEST PRIME AC
  High-voltage pistols for AC high-voltage testing with coded plugs
  (4 meter connector cable)
- Barrier set for high-voltage testing,
  CLAIM PROFITEST PRIME AC

Type	Article
SIGNAL PROFITEST PRIME AC	Z506B
STOP PROFITEST PRIME AC	Z506D
HV-P PROFITEST PRIME AC	Z506V
KEY PROFITEST PRIME AC	Z506E
CLAIM PROFITEST PRIME AC	Z504G
HV package, PRIME AC*	Z506Z

* Further information concerning the packages can be found on our website.

METRISO INTRO / BASE / TECH / XTRA / PRO

Insulation Measuring Instrument / Low Resistance Measuring Instrument



METRISO INTRO



METRISO BASE



METRISO TECH



METRISO XTRA



METRISO PRO

FEATURES:

- Intelligent filter system – measurement-dependent, precision activation for the measurement of very high resistances with:
  - Beating, i.e. compensation of 16⅔ and 50 Hz interference
  - Attenuation of capacitive influences from power cables etc.
  - Suppression of electric field influences
- Indication of dangerous touch voltage by means of LED
- Acoustic signal generation in the event of limit value violations
- Interference voltage detection when switched off (not with METRISO INTRO)
- Overvoltage protection – protects the instrument in the event of inadvertent connection to mains power
- Electronic fuse for protection of low-resistance (R_{LO}) and resistance (R) measurements
- Device self-test with integrated 10 MΩ test resistor per EN 50110 (not with METRISO INTRO)
- Measuring category: 600 V CAT III / 300 V CAT IV
- DAkkS calibration certificate (not with METRISO INTRO / PRO)

Type	Article
METRISO INTRO	M550N
METRISO BASE	M5500
METRISO TECH	M550P
METRISO XTRA	M550S
METRISO PRO	M550R

Type	METRISO INTRO	METRISO BASE	METRISO TECH
Display	LCD	LCD	LCD
Measuring voltage	250, 500, 1000 V	50 to 500 V (50, 100, 250, 500)	50 to 1000 V (50, 100, 250, 500, 1000)
Measuring range	10 kΩ ... 10 GΩ	10 kΩ ... 100 GΩ	10 kΩ ... 200 GΩ
Polarization index, PI/DAR	–	–	–
Low-resistance measurement	0.17 Ω ... 10 Ω	0.17 Ω ... 10 Ω	0.17 Ω ... 10 Ω
Voltage measurement	10 V ... 1000 V	10 V ... 500 V	10 V ... 1000 V

Type	METRISO XTRA	METRISO PRO
Display	LCD	Analog
Measuring voltage	50 to 1000 V (50, 100, 250, 500, 1000)	50 to 1000 V (50, 100, 250, 500, 1000)
Measuring range	10 kΩ ... 1 TΩ	10 kΩ ... 1 TΩ
Polarization index, PI/DAR	■	–
Low-resistance measurement	0.17 Ω ... 10 Ω	0.20 Ω ... 5 Ω
Voltage measurement	10 V ... 1000 V	10 V ... 1000 V

ACCESSORIES

METRISO® SET INTRO / BASE / TECH / XTRA / PRO



Test Probe for Remote Triggering



Ever-Ready Case

INCLUDED WITH METRISO sets:

- Test probe for remote triggering with METRISO, PROFITEST INTRO
- Ever-ready case for METRISO, PROFITEST INTRO

Type	Article
Test probe for remote triggering	Z550A
Ever-ready case	Z550C

Type	Article
METRISO INTRO Set	M551N
METRISO BASE Set	M5510
METRISO TECH Set	M551P
METRISO XTRA Set	M551S
METRISO PRO Set	M551R

METRISO PRIME 10

High-Precision Insulation, Low-Resistance and Voltage Measuring Instrument for up to 10 kV / 40 TΩ





The METRISO PRIME 10 insulation tester has been developed for the detection of insulation damage and for protection against electric shock in electrical power supply networks. The measurement results are used to determine the safety of electrical installations.

Features:

- Insulation measurement per EN 61557-2
- Test voltage in fixed steps: 50, 100, 250, 500, 1000, 2500, 5000 and 10,000 V
- Measurement with incrementally rising voltage
- Measuring range up to 40 TΩ per IEC 61557-2
- Measurement of polarization index and absorption ratio
- Measurement with shielded measurement cable
- Protection against voltage conducting objects
- Variable adjustment of limit values
- Digital filter for stabilizing measured values
- Creation of R/I or R/U diagrams
- Storage of test results
- Low-resistance measurement per DIN EN 61557-4
- Continuity testing of protective conductors and equipotential bonding connections with a test current of > 200 mA

Scope of delivery:

- Test instrument
- Set of measurement cables consisting of:
  - 11 kV cable, 3 m, (1000 V CAT IV), with banana plug jacks, red
  - 11 kV cable, 3 m, shielded (1000 V CAT IV), with banana plug jacks, black
  - 10 kV "E" cable, 3 m, (1000 V CAT IV), with banana plug jacks, blue
- 3 alligator clips, 5.5 kV, 32 A (1000 V CAT IV), black, red and blue
- 2 test probes, 5.5 kV, 32 A, with banana plug jacks, red and black
- 1 temperature probe (Z555J)
- 1 USB cable
- 1 power cable, 230 V
- 1 accessories pouch
- 1 set of operating instructions
- 1 test report
- 1 set of handling instructions for lithium-ion batteries
- 1 safety data sheet

Type	Article
METRISO PRIME 10	M555A
CASE METRISO PRIME 10*	Z555K
Backpack METRISO PRIME 10*	Z556K

* Further information concerning optional accessories can be found on our website.

METRAOHM | 413

Low Resistance Measuring Instrument



Digital low-resistance measuring instrument for measuring protective conductors, equipotential bonding and much more per DIN EN 61557-4

Features:

- Two measuring ranges from 0.01 to 1999 kΩ, zero balancing for measurement cable
- Measuring current: 200 mA constant at < 10 Ω
- Indication of interference voltage
- Compact and rugged, for service calls under harsh conditions and laboratory use
- Overvoltage protection – protects the instrument in the event of inadvertent connection to mains power
- Measuring category: 300 V CAT III / 600 V CAT II
- IP 65 protection

SCOPE OF DELIVERY:

- Plug-in measurement cable and 9 V battery

Type	Article
METRAOHM 413	M630A

METRALINE RLO CHECK

Digital, Low Resistance Measuring Instrument per EN 61557-4





The Metraline RLO-Check is a low-resistance ohmmeter with digital display for hazard-free testing of line resistances up to 20 Ω in electrical installations with nominal voltages of up to 500 V.

The Metraline RLO-Check is suitable for quick and safe testing of large protective conductors, ground conductors and equipotential bonding conductors, as well as shielding and lightning protection systems.

The measured value appears at the digital display with red (no-go) or blue (go) background illumination. Values of less than 1 Ω can be additionally indicated by means of a buzzer.

Features:

- Battery powered low-resistance measuring instrument
- Including cable reel with 30 m cable
- Automatic polarity reversal
- Acoustic alarm
- Optical alarm
- Measurement cable compensation
- Single-key operation
- Manual calibration

Scope of delivery:

- 1 measuring instrument
- 4 batteries (AA)
- 1 hip belt
- 1 cable reel with 30 m cable
- 1 test probe with protective cap
- 1 alligator clip
- 1 coil cable (measurement cable)
- 1 PE adapter for electric outlets
- 1 short-circuit shunt (0 Ω)
- 1 calibration shunt for continuity threshold (1 Ω)
- 1 set of operating instructions
- 1 test certificate

Type	Article
METRALINE RLO CHECK	M630W

PE RLO-CHECK-PACKAGE

Digital Low Resistance Measuring Instrument for Lighting Systems



The PE RLO-CHECK PACKAGE consists of a portable, digital, low-resistance ohmmeter with integrated cable reel and test probe extension.

Extending the test probe with the ultralight telescoping rod makes it especially well-suited for testing difficult to access objects such as lighting systems.

Features:

- Battery powered low-resistance measuring instrument
- Including cable reel with 30 m cable
- Automatic polarity reversal
- Acoustic alarm
- Optical alarm
- Measurement cable compensation
- Single-key operation
- Manual calibration

Scope of delivery:

- 1 measuring instrument
- 4 batteries (AA)
- 1 hip belt
- 1 cable reel with 30 m cable
- 1 telescoping rod, 120 cm (190 g)
- 1 test probe with protective cap
- 1 alligator clip
- 1 coil cable (measurement cable)
- 1 PE adapter for electric outlets
- 1 short-circuit shunt (0 Ω)
- 1 calibration shunt for continuity threshold (1 Ω)
- 1 set of operating instructions
- 1 test certificate

Type	Article
PE RLO-CHECK-PACKAGE	M630V

METRISO 5024

Analog Insulation Measuring Instrument



Analog insulation measuring instrument, low-resistance measuring instrument and voltmeter with buzzer for quick, two-hand operation

Features:

- Ergonomic handling
- Illuminated scale
- Insulation measurement with 100, 250 and 500 V measuring voltages
- Low-resistance measurements for protective conductor and equipotential bonding conductor resistance, and continuity
- Buzzer and blinking LED indicate alarm status for erroneous and implausible measurements
- Fluttering pointer as last-resort warning function

SCOPE OF DELIVERY:

- Insulation measuring instrument, ohmmeter and voltmeter
- Carrying pouch

Type	Article
METRISO 5024	M540E

Measuring Range	Intrinsic Uncertainty	Overload	Measuring Current	Short-Circuit Current
Insulation Resistance Measurement, Measuring Voltages: 100, 250, 500 V				
0.1 ... 400 MΩ	2.5%	600 V AC	> 1 mA	< 10 mA
Measuring error under reference conditions relative to scale length (l = 84.6 mm)				
Low-Resistance Measurement, Measuring Voltage: 4.5 V				
0 ... 4 Ω	2.5%	250 V DC	> 200 mA	–
Measuring error under reference conditions relative to upper range value (l = 74.9 mm)				
DC/AC Voltage Measurement (40 ... 200 Hz)				
0 ... 500 V	2.5%	600 V AC	450 kΩ	–
Measuring error under reference conditions relative to scale length (l = 73.3 mm)				

METRISO PRIME

Analog High-Voltage Insulation Measuring Instrument





Analog high-voltage insulation measuring instrument with permanently connected measurement cables and test probes

METRISO PRIME (crank generator): The battery powered **METRISO PRIME** is converted into the muscle powered **METRISO PRIME** by replacing the battery module with a crank generator.

Features:

- Extensive measuring range: 10 kΩ ... 1 TΩ
- Measuring range: 100 kΩ ... 100 MΩ (1000 V)
- Measuring voltages: 100, 250, 500, 1000, 1500, 2000, 2500 and 5000 V
- Measurements to 1000 V per **DIN EN 61557**
- Voltage measurement to 2000 V
- Concise logarithmic display
- Guard terminal for the elimination of surface current
- Measuring category: 600 V CAT III, 300 V CAT IV

SCOPE OF DELIVERY:

- Test instrument
- With battery module
- 5 kV alligator clips (KY 5000 A)

METRISO PRIME (crank generator)

- With crank generator
- 5 kV alligator clips (KY 5000 A)

METRISO PRIME-Set / METRISO PRIME-Set K (crank generator)

- KY 5000A
- GUARD 5000A
- F2000 universal carrying pouch

Type	Article
METRISO PRIME	M550T
METRISO PRIME (crank generator)	M550U
METRISO PRIME Set	M551T
METRISO PRIME Set K	M551U

METRISO PRIME+

Digital High-Voltage Insulation Measuring Instrument



METRISO PRIME+ with SECUTEST PSI

Digital high-voltage insulation measuring instrument with test voltages of up to 5000 V DC

Voltage Measurement to 1000 V

Testing for absence of voltage at the device under test in systems of up to 1 kV can be performed with the voltage measuring range.

Discharging Capacitive Devices Under Test

Capacitive devices under test such as cables and coils, which may be charged with test voltage, are discharged by the measuring instrument. The falling voltage value can be observed at the display.

Measurements per EN 61557

Nominal current amounts to 1 mA at a test voltage of 100, 250, 500 or 1000 V.

Highly Insulated Measurement Cables

The highly insulated measurement cables are permanently connected for safety reasons in order to avoid danger resulting from an inadvertently disconnected cable.

Polarization Index – PI

Polarization index testing is recommended for electrical machines. This procedure involves expanded testing of insulation resistance. DC measuring voltage from the **METRISO PRIME+** is applied to the insulation for a duration of 10 minutes. The measured value is documented after one minute, and after ten minutes. If the insulation is defective, the value measured after ten minutes is higher than the value measured after one minute. The relationship between the two measured values is the polarization index. Charged material within the insulation is aligned due to the application of measuring voltage over a long period of time, resulting in polarization. The polarization index indicates whether or not the charged material contained in the insulation can still be moved, thus allowing for polarization. This, in turn, is an indication of the condition of the insulation.

Features:

- Extensive measuring range: 0.4 MΩ ... 1 TΩ
- Variable test voltage, or in fixed steps: 100 V, 250 V, 500 V, 1 kV, 1.5 kV, 2 kV, 2.5 kV, 5 kV
- Polarization index and absorption ratio
- Voltage measurement to 1000 V
- Frequency measurement: 15 Hz ... 1 kHz
- Capacitance measurement: 0.1 ... 5 µF
- Measurement of electrical discharge
- Guard terminal for the elimination of surface current
- Supply power from mains, battery pack or external 12 V power supply
- Backlit dot matrix display
- Digital display of measured values and limit values
- Timer function: 1 s ... 100 min.
- Measuring category: 600 V CAT III, 300 V CAT IV
- DAkkS calibration certificate

SCOPE OF DELIVERY:

- Basic unit with permanently connected measurement cables and test probes
- Alligator clips (5 kV version)

Type	Article
METRISO PRIME+	M5000
METRISO PRIME+	M5000-V001

ISO CALIBRATOR 1

Test Adapter



Test Adapter for Insulation Measuring Instruments and Ohmmeters

Adapter for rapid, efficient testing of the accuracy of measuring instruments for insulation resistance and low-value resistance.

Insulation measuring instruments with nominal voltages of up to 1000 V can be tested with the **ISO CALIBRATOR 1**.

Features:

- Test range: 100 kΩ to 100 MΩ.
- Protection: housing: IP 50 / sockets: IP 20
- Usable with following instruments: **METRISO** series, **PROFITEST MASTER** series

Type	Article
ISO Calibrator 1	M662A

GUARD 5000A, LEADEX 5000 Guard Terminal for METRISO PRIME



Surface current is eliminated by using the guard terminal / guard cable.

Guard 5000A: Guard cable and 1 alligator clip

Leadex 5000: 5 m extension cord

Type	Article
Guard 5000A	Z580C
Leadex 5000	Z580D

KY 5000A Alligator Clip for METRISO PRIME



Alligator Clips, 5 kV Variant

Type	Article
KY 5000A	Z580B

GENERATOR 5000A Crank Generator for METRISO PRIME



The battery powered **METRISO PRIME** is converted into the muscle powered **METRISO PRIME (crank generator)** by replacing the battery module with a crank generator.

Type	Article
Generator 5000A	Z580A

PRO-AB Leakage Current Measuring Adapter

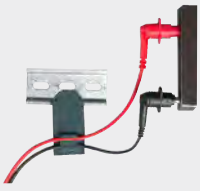


PRO-AB leakage current measuring adapter for PROFITEST MXTRA

- Input current: 0 ... 10 mA
- Input impedance: 1 kΩ ±0.5%
- Output resistance: 10 kΩ
- Output voltage: 10:1: 0 ... 1 V (0.1 V/mA) 1:1: 0 ... 10 V (1 V/mA)

Type	Article
PRO-AB	Z502S

MAGNETIC MEASURING PROBES Measuring Contactors



Magnetic test tips with 4 mm sockets

Type	Article
Magnetic test tips – 4 mm sockets	Z502Z

FUSE SET Fuse Set for Profitest M Series



PROFiTEST M fuse set 10 – accessory for PROFiTEST Master

- 10 ceramic fine-wire fuses, 500V 3,15 A FF

Type	Article
PROFITEST M fuse set 10	Z501U

THREE-PHASE CURRENT ADAPTERS A3-16 ... 63

3-Phase Current Adapter





3-phase current adapter for connecting test instruments to 5-pole CEE outlets

Features:

- The adapter corresponds to the 5-pole CEE outlet with appropriate nominal current.
- For 16 A nominal current: A3-16, 32 A: A3-32, 63 A: A3-63
- Phase sequence testing with signal lamps
- measuring category: 600 V CAT IV
- Testing the effectiveness of safety measures * with five 4 mm contact protected sockets

Type	Article
A3-16	GTZ3602000R0001
A3-32	GTZ3603000R0001
A3-63	GTZ3604000R0001

* Due to the integrated electronics for phase sequence detection, measurement results may be distorted during insulation resistance measurement.

AC CURRENT CLAMP SENSORS

Current Clamp Sensors



Z3512A WZ12C

Z3512A: Current clamp sensor, 0.1 / 1 / 10 / 100 / 1000 A AC, switchable

Article: WZ12C: Current clamp sensor: 1m A ... 15 A AC, 1 mV / mA, 1 A ... 150 A AC, 1 mV / A, switchable

Type	Article
Z3512A	Z225A
WZ12C	Z219C

MEASUREMENT CABLE

Measurement Cable



TR25 II TR50 II

TR25/50 II: Plastic drum with 25/50 m measurement cable
One end of the cable is integrated into the drum as a socket, and the other is equipped with a banana plug. The drum axle can be inserted with a handle.

Type	Article
TR25 II	Z503X
TR50 II	Z503Y

KS24 CABLE SET

Cable Set



KS24 cable set consisting of a 4 m long extension cord with a permanently attached test probe and a contact protected socket at the other end, plug-on alligator clip

Type	Article
KS24 cable set	GTZ3201000R0001

BATTERY SET

Set of Rechargeable Batteries



Battery Set (Z502H)



Charger (Z502P)



Battery Set Adapter Cable (Z503S)

Battery set for **PROFITEST MASTER** series: 8 rechargeable NiMH batteries

Chargers for **Z502H battery set**

PROFITEST MTECH+/MBASE+

PROFITEST MXTRA/MPRO/METRISO XTRA

PROFITEST INTRO

Type	Article
Comp. Master battery pack	Z502H
Charger PROFITEST MBASE MTECH	Z502P
Charger PROFITEST MTECH+/MBASE+/ MXTRA/MPRO/INTRO METRISO XTRA	Z502R
Battery set adapter cable	Z503S

SP500

Earth Drill



Earth drill, 420 cm long, with connector for 4 mm banana plug.
Can also be used as a probe or auxiliary earth electrode for earth measurements, RDC testing etc.

Type	Article
SP500	Z503Z

VARIO PLUG ADAPTER SET

VARIO Plug



Three self-retaining test probes with touch protection for the connection of measurement cables with 4 mm banana plugs, or with touch protected plugs for sockets with an opening of 3.5 mm to 12 mm, e.g. CEE or Perilex sockets.

For example, the test probes also fit the square PE jacks on Perilex sockets. Maximum permissible operating voltage: 600 V per IEC 61010.

Type	Article
VARIO plug set	Z500A

1081 PROBE

Probe



Floor Probe
This metallic tripod-type measurement electrode is used for:

- Determination of electrical resistance at elastic floor coverings in accordance with EN 1081
- Resistance measurement for insulating floors and walls in accordance with IEC 60364-6

Type	Article
Probe 1081	GTZ3196000R0001

PROBE SET

Test Probes





600 V CAT III

Test probes, 600 V CAT III
Set of test probes (red/black) 600 V CAT III, 1 A, test probe working range: 68 mm, diameter: 2.3 mm

Type	Article
Probe set	Z503F

PRO-PE CLIP

PRO-PE CLIP, 1000 V CAT IV, 32 A



Flat test clip for contacting busbars quickly and safely

Type	Article
PRO-PE Clip	Z503G

BARCODE READER

Barcode Scanner



Barcode scanner with laser and coil cable laid out especially for the PROFITEST MASTER / INTRO / PRIME series.

For identifying system components, equipment etc. These can be logged by the **PROFITEST**, and acquired measured values can be allocated to them with the scanner.

Features:

- Scanning of barcodes from considerable distances
- Variable barcode lengths
- Improved reading accuracy
- Green Spot technology
- Configuration of EAN13, CODE 39 and CODE 128 barcodes

Type	Article
Barcode Profiscanner RS 232	Z502F

SCANBASE / SCANWRITE | RFID

RFID Reader/Scanner



The RFID identification system is used to mark and identify tools and equipment.

Features:

ID numbers can be written to RFID tags via a PC with the SCANWRITE. The SCANWRITE, as well as other SCANBASE RFID reading devices, read out the code and forward it to our test instruments, in order to be able to allocate measured values and test results to the device under test in an unequivocal fashion.

Type	Article
SCANBASE RFID	Z751G

RFID reader/scanner, RS 232

See page 04 - 16 for details.

PROFITEST REMOTE

3-Phase Test Adapter for PROFITEST MTECH+ and PRIME



Loop and Line Impedance Measurement

Measurement of loop and line impedance can be performed in the 65 to 500 V range. Conversion to short-circuit current is based on the respective nominal line voltage, insofar as the measured line voltage is within the specified range. Test instrument measuring error is also taken into account for conversion.

Measurement of Insulation Resistance using Nominal Voltage, with Variable or Rising Test Voltage

Insulation resistance is usually measured with a nominal voltage of 500, 250 or 100 V. A test voltage which deviates from nominal voltage, and lies within a range of 15 to 500 V, can be selected for measurements at sensitive components, as well as systems with voltage limiting devices.

The following test instruments are suitable for use with the test adapter:

- PROFITEST MTECH+, as of FW V03.06.00
- PROFITEST MXTRA, as of FW V03.06.00
- PROFITEST PRIME, as of FW V03.05.00

Features:

- Measurement of loop and line impedance ZL-PE and ZL-N
- Measurement of insulation resistance RINS with up to 500 V DC
- No replugging required during measurement
- No phase reversal possible during measurement
- Saves time for testing in electrical systems
- Connection to the test instrument via 3-pole PRO-SCHUKO test adapter or 4 mm safety sockets L, N and PE
- The test adapter is controlled via the connected test instrument
- Connection to the electrical system via 4 mm safety sockets L1, L2, L3, N and PE
- Data communication via RS 232 port
- No need to determine offset thanks to 4-wire measurement
- Indication of conductor connection via LED

Type	Article
PROFITEST REMOTE	M514R

PROFITEST PRCD

Adapter for Standards-Compliant Testing of PRCDs



Adapter for standards-compliant testing of type S and K PRCDs by simulating faults per manufacturers' specifications.

Features:

- Testing of the following types of portable protective devices:
  - PRCD-S (single-phase / 3-pole and 3-phase / 5-pole)
  - PRCD-K (single-phase / 3-pole)
  - PRCD, 2-pole / 3-pole
- Function test, i.e. tripping test by means of simulating the following faults:
  - Interruption
  - Reversed wires
  - PE to phase
- Measurement of protective conductor current with current clamp transformer
- Measurement of protective conductor and insulation resistance with the PROFITEST MXTRA tester
- Tripping test with nominal residual current and measurement of time to trip with PROFITEST MXTRA tester
- Evaluation and documentation of the individual test steps with the PROFITEST MXTRA tester

Type	Article
PROFITEST PRCD	M512R

METRAFLEX P300

Flexible AC Current Sensor for PROFITEST MASTER



Flexible AC current sensor, 3, 30, 300 A, flexible current loop length: 45 cm, with batteries for PROFITEST MBASE, MTECH+, MPRO, MXTRA

Features:

- Broad range of applications, 3 measuring ranges: 3 A, 30 A, 300 A AC
- Large bandwidth: 20 Hz ... 4 kHz for harmonic analysis
- Easy to use in tight spaces thanks to a small sensor cross-section of 9.9 mm and a narrow, 13.6 mm end-cap
- High levels of safety for the operator, measuring category: 1000 V CAT III, 600 V CAT IV and unlimited overload capacity
- Accurate measurement, even with low current values, thanks to large dynamic range and high sensor sensitivity
- Current sensor with IP 65 protection

Type	Article
METRAFLEX P300	Z502E

PRO-... PLUG INSERTS



PRO-RLO II



PRO-UNI II

PRO-SCHUKO
Plug insert for Germany and other countries with corresponding plug system

PRO-CH
Plug insert for Switzerland in accordance with SEV

PRO-W
Same as PRO-Schuko but with angled earthing contact plug

PRO-A3 II
2/3-pole measuring adapter

PRO-A3 II NCC
Same as PRO-A3 II but with 10 m non-coil cables instead of coil cables

PRO-RLO II
Plug inserts for PE and other similar measurements

PRO-UNI II
Plug inserts with 3 connector cables for any connection standards

PRO-GB/USA Set
plug insert with adapter for GB and USA

PRO-RSA
Plug insert for South Africa

Type	Article
PRO-SCHUKO	GTZ3228000R001
PRO-CH	GTZ3225000R001
PRO-W	Z503A
PRO-A3 II	Z501O
PRO-A3 II NCC	Z503C
PRO-RLO II	Z501P
PRO-UNI II	Z501R
PRO-GB/USA set	Z503B
PRO-RSA	Z501A

POUCHES AND CASES

Universal Pouches



F2000



F2010



Ever-Ready Case

F2000

Universal carrying pouch for measuring and test instruments, as well as accessories. Dimensions: 380 x 310 x 200 mm

F2010

Universal carrying pouch with flexible compartments and display protection for PROFITEST INTRO, METRISO INTRO, BASE, TECH, PRO, XTRA and SECUTEST BASE, BASE 10, PRO

Ever-Ready Case

Ever-ready case for **PROFITEST MASTER** with external pockets for accessories

Type	Article
F2000	Z700D
F2010	Z700G
Ever-ready case	Z502X

E-CHECK SET

Special Set



Included with **E-CHECK-SET (article: M500U)**:

- **PROFITEST MTECH+ (article: M520R)**
- **E-CHECK case (article: Z502M)**
- VARIO plug set **(article: Z500A)**
- Charger **(article**: **Z502P)**
- Comp. master battery pack **(article: Z502H)**
- Writing pad

E-CHECK case (**article: Z502M):**
Printed with contents layout.

Optional: Trolley (**article: Z502N):**
Suitable for **E-CHECK case**

Type	Article
E-CHECK set	M500U
E-CHECK case	Z502M
Trolley	Z502N

SORTIMO L-BOXX GM

Plastic System Case







Plastic system case made of impact resistant ABS for **PROFITEST MASTER**

Optional: Foam insert for SORTIMO L-BOXX GM with compartment for **PROFITEST INTRO**

Optional: Foam insert for SORTIMO L-BOXX GM with compartment for **PROFITEST MASTER**

Type	Article
SORTIMO L-BOXX GM	Z503D
Foam SORTIMO L-BOXX, Profitest INTRO	Z503O
Foam SORTIMO L-BOXX, Profitest M	Z503E

GEOHM PRO/XTRA

High-Precision Earth and Low-Resistance Measuring Instruments



GEOHM PRO



GEOHM XTRA

Battery Powered Earth Tester – also for Measuring Soil Resistivity

Features:

- 3 and 4-wire earth resistance measurement
- 3-wire earth resistance measurement with one current clamp
- Loop resistance measurement with 2 current clamps without disconnection (if the use of auxiliary electrodes isn't possible)
- Soil resistivity (Wenner method)
- Current measurement with the help of clamp meters (e.g. leakage current measurement) and flexible clamp meters
- Low-resistance of the PE conductor with 200 mA (per IEC 60364-6-61, section 6.12.2)

GEOHM XTRA:

- Integrated GPS module
- Measured values are saved together with GPS coordinates

Additional features:

- RS and RH resistance measurements via auxiliary electrodes
- Measurement of interference voltages
- Measurement of interference frequencies
- Measurement even where interference voltages occur in systems with 16⅔, 50 and 60, as well as 400 Hz (with automatic and manual selection of the right measurement signal frequency)
- Measuring voltage selection (25 V or 50 V)
- Entry of distances between the electrodes in meters (m) and feet (ft) for measurement of soil resistivity
- Memory for 990 measured values (10 banks with 99 units each)
- Clamp meter calibration
- RTC real-time clock
- Data transmission to the PC (USB)
- Symbolic display of battery voltage

SCOPE OF DELIVERY:

- Test instrument
- Carrying pouch
- Measurement cable, 1.2 m, red
- Measurement cable, 2.2 m, black
- 2 alligator clips, red and black
- 2 measurement cables, 25 m, red and green
- Measurement cable, 50 m, blue
- 4 earth spikes, 30 cm
- USB cable
- Automotive charging cable
- Screw terminal
- Power pack
- Operating Instructions
- Calibration certificate

Type	Article
GEOHM PRO	M592A
GEOHM XTRA	M592B

GEOHM C

Earth Tester



Battery Powered Earth Tester – also for Measuring Soil Resistivity

Features:

- Compact, menu-driven instrument for the measurement of earthing resistance for 3 or 4-wire connection
- Continuous monitoring of interference voltage, as well as auxiliary earth electrode and probe resistance with indication if allowable limit values are violated
- Complete display of all required values at a large dot matrix display, or warning with 4 LEDs Easy, concise operation with only 4 keys.
- Measurement of earthing resistance in 5 ranges up to 50 kΩ
- Voltage measurement: 10 ... 250 V
- Frequency measurement: 45 ... 200 Hz
- Battery monitoring and self-test
- Integrated memory with IrDA interface
- Earth tester per **DIN EN 61557**
- Extremely rugged 2-component housing

SCOPE OF DELIVERY:

- Test instrument
- Neck strap
- Set of batteries
- Factory calibration certificate
- Operating Instructions

Type	Article
GEOHM C	M590A

GEOHM 5

Earth Tester for All Known Measuring Methods





This battery powered measuring instrument can also be used to ascertain or measure soil resistivity and ohmic resistance in accordance with the current-voltage measuring method. Easy, concise operation with only 4 keys.

Features:

- Measurement of:
  - Earth resistance
  - Selective earth resistance
  - Soil resistivity
- Current (TRMS) via clamp meter (optional)
- Conventional 3 and 4-pole measurement
- Selective single-clamp measurement (optional)
- 2-clamp measurement (optional)
- Battery operation is possible (optional)
- No balancing required
- Continuous monitoring of interference voltage and auxiliary earth electrode resistance with indication when allowable limit values are exceeded
- Data storage for 250 measurements (1000 measured values)
- Data interface for transmission of measured values to a PC

SCOPE OF DELIVERY:

- One 4.5 meter black test cable, one 4.5 meter green test cable, one 15 meter red test cable
- Blue test cable, 20 meters
- 4 earth spikes
- 4 batteries per LR14
- Carrying strap
- Stackable system case

Type	Article
GEOHM 5-SET	M591B

METRACLIP EARTH

Earth Clamp Meter



CAT IV



APPLICATIONS

The earth clamp meter can be used to test the resistance of any conductive system which demonstrates loop characteristics.

The following measurements are possible:

- Earth resistance measurement if grounding is connected in series to the equipotential bonding conductor
- Other earth measurements, for example via overhead ground wires or interconnected transmission towers for power transmission or telecommunications
- Measurements at distributed ground connections with a common ground plane

Measuring Method

The earth clamp meter simultaneously fulfils requirements for use as a clamp generator and a clamp meter:

- The test current which flows through the generator winding generates an alternating voltage in the enclosed conductor with a constant level E.
- A sensor winding detects current I induced in the conductor in this way, from which the clamp meter calculates loop impedance using the following equation: $Z_{Loop} = E/I$.

In the advanced mode, an additional loop inductance measurement is performed which takes the influence of the respective line frequency into consideration.

BENEFITS

- Clamp generator and meter in a single device – permits simplified measurement without auxiliary earth electrodes
- Clamp measuring functions:
  - Earth loop resistance: 0.01 ... 1500 Ω
  - Loop inductance: 10 ... 500 µH
  - Leakage current: 0.2 mA ... 40 A AC,
  - Touch voltage: 0.1 ... 75 V
- Minimal influence due to interference current
- Large OLED display: up to 3 measured values can be read simultaneously
- Measured value memory for resistance and leakage current, each with date and time
- Compact and user-friendly: one-hand operation thanks to minimal weight
- and easy to open clamp with spring force compensation
- Extremely safe thanks to 600 V CAT IV

Features

- Measurement of loop impedance in parallel connected grounding networks with a much simpler procedure than possible with conventional processes using two auxiliary earth electrodes
- Impedance measurement is especially accurate for low values, because inductance present in the loop is taken into consideration during resistance measurement.
- Touch voltage is estimated by multiplying loop impedance and leakage current. The voltage value ascertained in this way is the maximum value which can occur between the measuring point and earth, because the measured loop impedance value takes the entire loop into account.

SCOPE OF DELIVERY:

- 1 earth clamp meter in carrying case
- 4 batteries (LR6 or AA)
- 1 test certificate
- 1 mini CD-ROM with operating instructions in D, GB, F, E and I
- 1 set of condensed operating instructions in D, GB, F, E and I, as well as NL, PL and RO, printed
- 1 safety data sheet in 20 languages
- 1 calibration loop

Type	Article
METRACLIP EARTH	M312N

E-SET BASIC

Can be used with PROFITEST MXTRA / MXTRA IQ, MPRO / MPRO IQ, GEOHM C, GEOHM 5, GEOHM PRO and XTRA*



Basic Set of Measuring Accessories for Measurements with Earth Spikes

MEASURING ACCESSORIES SET CONSISTING OF:

- 1 carrying pouch
- 2 earth spikes, 420 mm
- 1 blue measurement cable, 40 m long, on cable reel with hand strap, 1 kV CAT III
- 1 red measurement cable, 20 m long, on a cable reel with hand strap, 1 kV CAT III
- 1 black measurement cable, 2 m long, 1 kV CAT IV
- 1 green measurement cable, 2 m long, 1 kV CAT IV
- 1 red measurement cable, 30 cm long, 1 kV CAT IV
- 1 blue measurement cable, 30 cm long, 1 kV CAT IV
- 1 black test clamp with 4 mm socket
- 1 green test clamp with 4 mm socket

Type	Article
E-SET Basic	Z593A

* Only in combination with PRO-RE adapter **(Z501S)**

E-SET PROFESSIONAL

Can be used with PROFITEST MXTRA / MXTRA IQ, MPRO / MPRO IQ, GEOHM C, GEOHM 5, GEOHM PRO and XTRA*



Professional Measuring Accessories Set for Earth Measurements

MEASURING ACCESSORIES SET CONSISTING OF:

- 1 carrying pouch
- 4 earth spikes, 500 mm
- 1 blue measurement cable, 40 m long, on cable reel with hand strap, 1 kV CAT III
- 1 red measurement cable, 20 m long, on cable reel with hand strap, 1 kV CAT III
- 1 black measurement cable, 5 m long, 1 kV CAT IV
- 1 green measurement cable, 5 m long, 1 kV CAT IV
- 1 red measurement cable, 30 cm long, 1 kV CAT IV
- 1 blue measurement cable, 30 cm long, 1 kV CAT IV
- 1 black test clamp with 4 mm socket
- 1 green test clamp with 4 mm socket
- 1 hammer, 1.25 kg
- 1 roll-up measuring tape
- 1 dust cloth
- 1 writing case with pad and pen

Type	Article
E-SET Professional	Z592Z

* Only in combination with PRO-RE adapter **(Z501S)**

E-SET 5

Can be used with following instruments: GEOHM C, GEOHM 5, PROFITEST MXTRA/MPRO*



Extensively Equipped Earth Measurement Case for Device and Accessories

EARTH MEASUREMENT CASE CONSISTING OF:

- 1 imitation leather case
- 1 drum with 25 m measurement cable
- 2 drums with 50 m measurement cable each
- 3 measurement cables, 0.5 m ea.
- 1 measurement cable, 2 m
- 1 test clamp
- 4 earth drills, 350 mm long
- 1 dust cloth
- 2 pads with forms

Type	Article
E-SET 5	Z590B

* Only in combination with PRO-RE adapter **(Z501S)**

E-CLIP 1 / E-CLIP 2

Clamp Meter and Generator Clamp



E-Clip 1





E-Clip 2

E-Clip 1

Clamp meter: 1 mA ... 1200 A, 1 mA / A, 40 Hz ... 5 kHz, 52 mm diameter

- Measuring range: 1 mA ... 1200 A
- Measuring category: 600 V CAT III
- Max. cable diameter: 52 mm
- Transformation ratio: 1000 A / 1 A
- Frequency range: 40 Hz ... 5 kHz
- Output signal: 1 µA ... 1.2 A

INCLUDED WITH THE E-CLIP 1:

- Clamp meter with connector cable (1.5 m) and laboratory safety plug

E-Clip 2

Generator clamp, 0.2 ... 1200 A, 1 mA / A, 0 Hz ... 5 kHz, 52 mm dia. same as **E-Clip 1** except:

- Measuring range: 0.2 A ... 1200 A
- Output signal: 0.2 mA ... 1.2 A

SCOPE OF DELIVERY:

- Generator clamp with laboratory safety plug inputs

Type	Article
E-Clip 1	Z591A
E-Clip 2	Z591B

PHASECOP 2

Phase Sequence Indicator



Phase Sequence Indicator with LEDs and Contact Protected Plugs

Instrument for determining direction of rotation and phase sequence in three-phase systems Phase sequence is acquired by means of an electronic circuit.

The direction of rotation is indicated by one of two directional arrows, each of which is equipped with an LED. An LED is provided for each phase which indicates whether or not the phase conductor is live.

The device can be used in all low-voltage systems.

FEATURES:

- Complies with **EN 61557-7,** indicates direction of rotation and phase
- Nominal range of use: 90 ... 660 V / 45 ... 1000 Hz
- Measuring category: 600 V CAT III

SCOPE OF DELIVERY:

- Phase sequence indicator
- 3 permanently connected measurement cables with contact-protected plugs
- 3 plug-on test probes
- 1 alligator clip

OPTIONAL ACCESSORIES:

- F801 ever-ready case **(GTY3172070P01)**

Type	Article
PhaseCop 2	GTM5202000R0001

METRAPHASE 1

Phase Sequence Indicator



Phase Sequence Indicator with Electronic Rotary Dial, Frequency Display and Nominal Line Voltage Display – Complies with Safety Regulations

The mechanical rotary dial based on the Ferraris principle preferred by many users necessitates a large housing for the respective clearances and creepage distances.

Our phase sequence indicator has an electronic rotary dial. LEDs arranged in a circular array not only indicate the direction of rotation, but rather line frequency as well by means of LEDs which light up in various colors.

The presence of voltage at each phase is indicated with additional LEDs in accordance with the regulations, as is nominal line voltage. The phase sequence indicator can be used as a 3-pole or a 2-pole indicator.

SCOPE OF DELIVERY:

- Phase sequence indicator
- 3 plug-in measurement cables with contact-protected plugs
- 3 plug-on test probes
- 1 alligator clip
- 4 batteries
- Carrying case

OPTIONAL ACCESSORIES:

- **GH18 (GTZ3212000R0001)**: rubber holster
- **Vario plug set (Z500A):** 3.5 ... 12 mm dia.

Type	Article
METRAPhase 1	M620A



Features:

- Complies with EN 61557-7
- Indicates direction of rotation and phase, as well as nominal line frequency and voltage
- Nominal range of use: 100 ... 690 V / 50 ... 400 Hz
- Power supply: 4 ea. mignon cell per IEC LR 6
- Measuring category: 600 V CAT IV

Rotating field direction:

Rotating Field Direction	Phase Sequence	Display, Phase LEDs	Display, Rotary LEDs
Clockwise	L1 - L2 - L3	L1, L2, L3 light up	Green LED rotates clockwise
Counterclockwise	L3 - L2 - L1	L1, L2, L3 light up	Red LED rotates counterclockwise
Asymmetrical rotary field	Lx - N/PE - Lx	Connection to N/PE does not light up	Green or red LED rotates clockwise or counterclockwise depending on connection
One missing phase	Lx - X - Lx	Missing phase does not light up, the other 2 do	–

DUSPOL®

IEC / EN 61243-3



DUSPOL® – analog 1000



DUSPOL® – expert 1000



DUSPOL® – digital 1000

DUSPOL® Voltage and Continuity Testers – Top Level Product Safety

FEATURES:

- Direct display without pushbutton activation – high-impedance testing
- Continuity test with buzzer and LED or LCD
- Load switched via pushbutton (low-impedance testing)
- Vibration alarm in the tester handle
- Measuring point illumination
- Single-pole phase test
- Phase sequence test
- Storage of test results
- Rugged housing with rubberized grip
- Voltage display: 12 to 1000 V (AC/DC), fully functional even without batteries
- Impact resistant, dustproof housing, protected against water jets (IP 65)
- Safety – always and everywhere: no batteries required (Duspol analog)
- Measuring category: 600 V CAT IV / 1000 V CAT III

Type	Article
DUSPOL® – analog 1000	M611D
DUSPOL® – expert 1000	M611E
DUSPOL® – digital 1000	M611F

EN 61243-3	DUSPOL® - analog 1000	DUSPOL® - expert 1000	DUSPOL® - digital 1000
Display	Plunger coil / LED	LED	LED / LCD
Display levels	12 V to 1000 V	12 V to 1000 V	1 V ... 1 000 V_{AC} (TRMS) / 1200 V_{DC}
Continuity testing	–	LED up to 100 kΩ	LED up to 100 kΩ
Resistance	–	–	0.1 kΩ to 300 kΩ
Diode	–	–	0.3 V ... 2 V
Phase sequence test	LED	Green LED	Green LED
Single-pole phase test	LED	Red LED	Red LED
Polarity test	LED	LED	LCD
Frequency	–	–	15 Hz ... 1 kHz
30 mA RCCB tripping via pushbutton	■	■	■
Measuring point illumination	–	■	■
Batteries	–	2 ea. 1.5 V AAA	2 ea. 1.5 V AAA

PROFISAFE 690 B

EN 61243-3



PROFISAFE 690 B



LCD PROFISAFE 690 B

Rugged Voltage, Phase, Continuity and Polarity Tester plus Phase Sequence Indicator, 690 V, in accordance with EN 61243-3.
Maintenance free for life – the ProfiSafe is an especially handy and safe tester without batteries.

Features:

- Double indication reliability
- Individually tested for dielectric strength
- Voltage test
- Phase test
- Polarity test
- Phase sequence indicator
- Continuity testing
- Rugged housing, hazard-free use
- Even under damp conditions, IP 65 protection
- Easy to operate
- Measuring category: 690 V CAT III, 600 V CAT IV

Type	Article
PROFISAFE 690B	M630H

METRAVOLT 12D + L/VT 1500

EN 61243-3



METRAVOLT 12D + L



METRAVOLT VT 1500

METRAVOLT 12D + L:

Voltage and Resistance Tester with Display of Phases, Polarity and Direction of Rotation

- Large backlit display
- Resistance measurement: 10 kΩ ... 1999 kΩ
- Measuring category: 1000 V CAT III, 600 V CAT IV

METRAVOLT VT 1500:

Voltage and Continuity Tester per DIN EN 61243-3

- Phase test
- Phase sequence testing
- Phase sequence testing without path to ground (IT systems)
- Load connection: 30 mA RCD tripping
- Hold function

Type	Article
METRAVOLT 12D + L	M630G
METRAVOLT VT 1500	M630P

EN 61243-3	PROFISAFE 690B	METRAVOLT 12D + L	METRAVOLT VT 1500
Nominal voltage	12 ... 690 V	24 ... 1000 V_{AC} / 1500 V_{DC}	0 ... 1000 V_{AC} / 1500 V_{DC}
Measuring category	690 V CAT III / 600 V CAT IV	1000 V CAT III / 600 V CAT IV	1000 V CAT IV
Protection	IP 65	IP 65	IP 65
Surge strength / test voltage	> 8 kV / 6 kV	> 12 kV / 6 kV	> 12 kV / 6 kV
Display levels	12, 24, 50, 120, 230, 400, 690 V	–	0.03 V ... 1500 V DC 0.15 V ... 1200 V AC
Input resistance	167 kΩ AC/DC at 690 V 200 kΩ AC/DC at 50 V	Approx. 320 kΩ AC Approx. 710 kΩ DC	317 kΩ at 50 V / 50 Hz 200 kΩ at 1000 V AC 589 kΩ at 1000 V DC
Continuity testing	0 ... 1 000 kΩ	0 ... 1 999 kΩ	0 ... 999 kΩ
Frequency range	0 ... 500 Hz	15 ... 10 kHz < 500 V	$16^2/_3$ Hz ... 10 kHz < 500 V $16^2/_3$ Hz ... 2 kHz > 500 V
Current	3.4 mA	3.2 mA	3.5 mA
Display,	LCD (backlit) + LEDs	LCD (backlit) + LEDs	LCD (backlit) + LEDs
Power supply	Rechargeable Li battery	9 V block battery	9 V block battery
Functions	Voltage testing and measurement plus phase, continuity, polarity and phase sequence indicator		

		AC/DC Current Clamp Meters			
					
Technical Data		**METRACLIP 41**	**METRACLIP 410**	**METRACLIP 61**	**METRACLIP 62**
Article		**M320A**	**M320B**	**M311D**	**M311F**
Special features		Accurate measurement of low-value direct and alternating current	Compact, lightweight and handy for direct and alternating current	Compact and lightweight for low and high value alternating current (sinusoidal)	Insensitive to magnetic interference fields thanks to double shielding
Clamp opening (mm)		25	25	40	18
AC measuring method		TRMS	TRMS	Mean value	TRMS
Vmax (V) / CAT		300 V CAT III	300 V CAT III	300 V CAT III	300 V CAT III
Current (A)	**AC**	4.000 / 4000 A_{RMS}	40.00 / 400.0 A_{RMS}	30.00 / 300.0 mA 30.00 / 300.0 A	200.0 / 2000 mA_{RMS} 9.99 A_{RMS}
	DC	±4.000 / ±40.00 A_{DC}	±40.00 / ±400.0 A_{DC}	–	±200.0 / ±2000 mA_{DC} ±9.99 A_{DC}
	AC/DC	–	–	–	–
	Starting current	–	–	–	–
Voltage (V)	**AC**	–	–	–	–
	DC	–	–	–	–
	AC/DC	–	–	–	–
Frequency Range	**(U) AC**	–	–	–	–
	(I) AC	–	–	–	–
Peak memory		DATA HOLD	DATA HOLD	DATA HOLD	Min / Max / Hold
Continuity		–	–	–	–
Resistance (Ohms)		–	–	–	–
Active power (W)		–	–	–	–
Apparent power		–	–	–	–
Reactive power		–	–	–	–
Power supply (batt.)		9 V IEC 6F22 / 6LR61	9 V IEC 6F22 / 6LR61	2 ea. 1.5 V LR44 / SR 44	2 ea. 1.5 V LR6 (AA)
Dimensions (mm)		75 x 190 x 30	75 x 190 x 30	64 x 176 x 23	76 x 194 x 30
Weight with battery		0.235 kg	0.235 kg	0.125 kg	0.35 kg
Accessories included in scope of delivery		– Pouch optional	– Pouch optional	Imitation leather pouch	Imitation leather pouch

METRACLIP EARTH (see PAGE 03 - 30)

AC/DC Milliampere Clamp Meters		AC/DC Clamp Multimeters			
					
METRACLIP 63	**METRACLIP 64**	**METRACLIP 85**	**METRACLIP 86**	**METRACLIP 87**	**METRACLIP 88**
M311G	**M311H**	**M312J**	**M312K**	**M312L**	**M312M**
Accurate measurement of low-value direct and alternating current (sinusoidal)	Accurate measurement of low-value direct and alternating current (sinusoidal)	Multimeter functions, temperature measurement, adapter function	Multimeter functions, power measurement	Multimeter functions, power measurement, data logger, analysis software	Multimeter functions, power measurement
5	30	34	34	48	60
Mean value	Mean value	TRMS	TRMS	TRMS	TRMS
300 V CAT III	300 V CAT III	1000 V CAT III 600 V CAT IV	1000 V CAT III 600 V CAT IV	1000 V CAT IV	1000 V CAT IV
99.99 / 999.9 mA 9.999 A	99.99 / 999.9 mA 9.999 A	60.00 / 600.0 A_{RMS}	60.00 / 600.0 A_{RMS}	99.99 / 999.9 A_{RMS}	99.99 / 999.9 / 2000 A_{RMS}
±99.9 / ±999. mA_{DC}	±99.9 / ±999. mA_{DC}	±60.0 / ±600. / ±900 A_{DC}	±60.0 / ±600. / ±900 A_{DC}	±99.99 / ±999.9 / ±1500 A_{DC}	±99.99 / ±999.9 / ±3000 A_{DC}
–	–	60.00 / 600.0 A_{RMS} 60.00 / 600.0 / 900 A_{Peak}	60.00 / 600.0 A_{RMS} 60.00 / 600.0 / 900 A_{Peak}	99.99 / 999.9 A_{RMS} 99.99 / 999.9 / 1500 A_{Peak}	99.99 / 999.9 / 2000 A_{RMS} 99.99 / 999.9 / 3000 A_{Peak}
–	–	6 … 600 A_{RMS} / 900 A_{Peak}	6 … 600 A_{RMS} / 900 A_{Peak}	10 … 1000 A_{RMS} / 1500 A_{Peak}	20 … 2000 A_{RMS} / 3000 A_{Peak}
–	–	60.00 / 600.0 / 1000 V_{RMS}	60.00 / 600.0 / 1000 V_{RMS}	99.99 / 999.9 V_{RMS}	99.99 / 999.9 V_{RMS}
–	–	±60.00 / ±600.0 / ±1000 V_{DC}	±60.00 / ±600.0 / ±1000 V_{DC}	±99.99 / ±999.9 V_{DC}	±99.99 / ±999.9 V_{DC}
–	–	60.00 / 600.0 / 1000 V_{RMS} 60.00 / 600.0 / 1 400 V_{Peak}	60.00 / 600.0 / 1000 V_{RMS} 60.00 / 600.0 / 1 400 V_{Peak}	99.99 / 999.9 V_{RMS} 99.99 / 999.9 / 1 400 V_{Peak}	99.99 / 999.9 V_{RMS} 99.99 / 999.9 / 1 400 V_{Peak}
–	–	5.0 Hz … 19.99 kHz	5.0 Hz … 19.99 kHz	5.0 Hz … 19.99 kHz	5.0 Hz … 19.99 kHz
–	–	5.0 … 2999 Hz	5.0 … 2999 Hz	5.0 … 1999 Hz	5.0 … 999.9 Hz
DATA HOLD	DATA HOLD	Min / Max / Hold	Min / Max / Hold / Peak	Min / Max / Hold / Peak	Min / Max / Hold / Peak
–	–	0 … 599.9 Ω	0 … 599.9 Ω	0 … 999.9 Ω	0 … 999.9 Ω
–	–	0 … 59.99 kΩ	0 … 59.99 kΩ	0 … 99.99 kΩ	0 … 99.99 kΩ
–	–	–	5999 W / 59.99 / 599.9 / 900 kW	9999 W / 99.99 / 999.9 / 1500 kW	9999 W / 99.99 / 999.9 / 3000 kW
–	–	–	5999 VA / 59.99 / 599.9 / 900 kVA	9999 VA / 99.99 / 999.9 / 1 500 kVA	9999 VA / 99.99 / 999.9 / 3 000 kVA
–	–	–	5999 var / 59.99 / 599.9 / 900 kvar	9999 var / 99.99 / 999.09 / 1500 kvar	9999 var / 99.99 / 999.09 / 3000 kvar
4 ea. 1.5 V LR6 (AA)	4 ea. 1.5 V LR6 (AA)	9 V IEC 6F22/6LR61	9 V IEC 6F22/6LR61	4 ea. 1.5 V LR6 (AA)	4 ea. 1.5 V LR6 (AA)
19 x 113 x 28	33 x 170 x 24	222 x 78 x 42	222 x 78 x 42	272 x 92 x 41	296 x 11 x 41
0.28 kg	0.28 kg	0.34 kg	0.34 kg	0.60 kg	0.64 kg
Carrying pouch, analog output cable		1 pair of safety measurement cables with test probe, temperature sensor (0 to +200 °C), carrying pouch	1 pair of safety measurement cables with 2 plug-on test probes and 1 alligator clip, carrying pouch	1 pair of safety measurement cables with 2 plug-on test probes and 2 alligator clips, carrying pouch, PC program for measurement data evaluation	1 pair of safety measurement cables with 2 plug-on test probes and 1 alligator clip, carrying pouch

METRACELL BT PRO

Portable Test Instrument for Evaluating Storage Batteries



METRACELL BT PRO



The METRACELL BT PRO is a portable, multifunctional test instrument for the evaluation and maintenance of battery systems and uninterruptible power supplies (UPSs), for example in computer centers, hospitals and power plants.

Voltage, as well as electrical and electrochemical resistance of battery blocks can be determined with the METRACELL. Discharge tests are possible by acquiring discharge current and the voltage curve at the block and battery levels. The instrument stores up to 30,000 data records which can be managed with the included battery management software, and can be read out in the form of expressive reports. The METRACELL BT PRO is shipped in a carrying case complete with measuring accessories, charger and rechargeable batteries.

Features:

- Simple, intuitive menu prompting
- Easy-to-understand measured value display
- Illuminated, high-contrast display
- Compact design and impact-resistant ABS housing with additional rubber holster
- Freedom of movement thanks to carrying strap, retaining clip and retaining magnet
- Acoustic feedback and automatic acknowledgment for viewing freedom
- Integrated Bluetooth® interface
- Integrated infrared interface
- Operating time: approx. 10 hours
- Battery operation – furnished with 4 rechargeable NiMH batteries and charger as standard equipment
- Kelvin probes for 4-wire measurement (suppresses influence on the resistance measurement results due to cable and contact resistance)
- Carrying case for safe storage of the test instrument and accessories
- PC-aided measurement data management, evaluation and backup

Features:

- Measurement of block voltage up to ± 24.5 V DC
- Measurement of overall voltage up to 600 V DC and 300 V AC
- Capacity tests for individual blocks and entire batteries
- Measurement of internal resistance with simultaneous measurement of electrical resistance (Rel) 1 and electrochemical (charge-transfer) resistance (Rct) 2
- Automatic recording of voltage and current curves (current curves with optional sensor technology)
- Measurement of block temperatures (with optional sensor technology)
- Ascertainment of acid densities
- Battery identification by means of RFID tag reader
- Storage of up to 300,000 data records
- Battery tester management software for managing battery databases and measurement data, as well as for the evaluation of measurement data including generation of expressive reports
- Wireless measurement data transfer

SCOPE OF DELIVERY:

- 1 test instrument
- 4 type AA batteries, 1.2 V
- 1 power pack
- 1 rubber holster
- 1 carrying strap
- 1 carrying case
- 2 alligator clips (KY95-3)
- 1 set of multimeter test probes (KS29)
- 1 set of Kelvin probes for 4-wire measurement
- 1 BT PRO Manager (battery tester management software)
- 1 test report / factory calibration certificate
- 1 set of condensed operating instructions

Measured Quantity	Description
Block voltage	Up to +/-24 V DC
Overall voltage	+/-600 V DC
AC voltage	+/-300 V AC
Resistance	Up to 1000 mΩ
Current	Via CP330 / 1800 current clamp sensor
Temperature	Via METRATHERM IR BASE / Z680A temperature sensor
Acid density	Via DMA35 sensor from Anton Paar

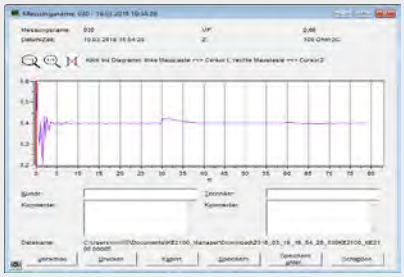
Type	Article
METRACELL BT PRO	B100B
CP1800	Z204A
CP330	Z202B
Metratherm	Z680A
Spring-loaded contact pins	Z227F

METRACABLE TDR PRO

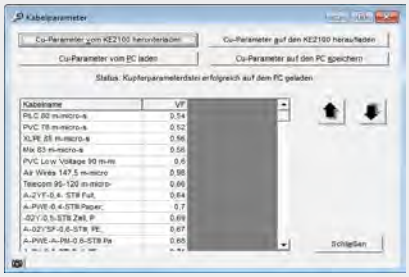
Time Domain Reflectometer



METRACABLE TDR PRO



Power Measurement



Cable Database

The METRACABLE is a handy, compact time domain reflectometer for pinpointing faults in all types of cables without service, for example twisted-pair, coaxial and power cables. It has a very short minimum resolution and a range of up to 14 km. Adjustable impedance and the editable velocity factor fulfill all requirements for a successful test setup. The tester features easy, intuitive operation.

With just a single click, the AUTO test ensures that impedance and the specified length correspond to the cable section under test, thus assuring quick diagnosis. Distances can be quickly determined thanks to the easy-to-use cursor, which is also supported by a second cursor.

Software:

Measurement results stored to the instrument can be queried and evaluated after clicking *Cable Measurement* in the menu. Measurements which have been downloaded and saved to the PC can also be evaluated at a later point in time without establishing a connection to the instrument.

Cable databases stored at the instrument can be viewed and managed after clicking Cable Parameters in the menu.

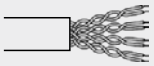
Amongst other things, the *Configuration* menu makes it possible to check your instrument's current software and hardware versions and transfer firmware updates to the METRACABLE, where they can be installed in the *Settings* menu under *Program Update*.

Supported Cable Types:

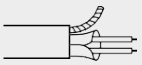
A broad range of various cable types can be tested and any fault locations can be determined with the help of the TDR method. The METRACABLE is capable of examining cables with lengths of up to 14 kilometers such as the following:



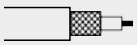
Multi-Wire Cable



Twisted Pair Cable



Shielded Cable



Coaxial Cable

Features:

- Easy operation
- AUTO test for immediate use
- High measuring resolution / cable lengths up to 14 km
- Menu language: English or German
- Shows distance to the fault in meters or feet
- Symmetrical search signal
- Freeze function for precise fault evaluation
- Measurement curve as reference in the background

SCOPE OF DELIVERY:

- 1 test instrument
- 1 pair of measurement cables
- 1 pair of alligator clips
- 1 BNC adapter
- 4 batteries
- 1 ever-ready case
- 1 set of operating instructions

Type	Article
METRACABLE TDR PRO	M281A

Technical Characteristics	
Range	≤ 14 km
Accuracy	+1% ± pixels at 0.66 VF
Resolution	3.125 ns or 0.3 m, depending on cable
Surge protection	100 V DC, 230 V AC / 50 Hz
Output pulse	Max. 20 V pp
Pulse lengths	12, 25, 50, 100, 200, 500, 1000, 2500 ns
Velocity factor	Adjustable from 0.2 to 0.99 in steps of 0.01
Impedance	75, 100, 120, 150 Ω
Signal type	Symmetrical
Magnification factor	In steps of 6 dB
Cable database	Up to 32 entries
Shutdown interval	Adjustable automatic shutdown
Background illumination	Adjustable duration and contrast

METRAFUSE FD PRO

Fuse Finder



METRAFUSE FD PRO

The METRAFUSE FD PRO has been developed for quick identification of fuses and circuit breakers used to protect electrical circuits.

The METRAFUSE FD PRO consists of a receiver and an emitter. The emitter is integrated into the electrical circuit under test which supplies it with electrical power, where it generates a modified high-frequency signal for injection into the live conductor. The emitter's signal is captured by the receiver. An emitter signal is generated as soon as a fuse or a circuit breaker is detected. The change of state is indicated optically by means of an LED, as well as acoustically.

SCOPE OF DELIVERY:

- 1 METRAFUSE FD PRO emitter
- 1 METRAFUSE FD PRO receiver
- 1 block battery, 9 V
- 1 power supply cable for the emitter
- 1 set of test probes, short-circuit proof, including alligator clip
- 1 carrying pouch
- 1 set of operating instructions

Type	Article
METRAFUSE FD PRO	M660C

Power	
Receiver power supply:	9 V block battery
Automatic shutdown of the receiver:	6 minutes
Emitter power supply:	Via the circuit under test (100 … 250 V AC, 50 … 60 Hz)
Emitter power consumption:	< 20 mA

Ambient Conditions	
Operating temperature:	0 ... +40 °C
Storage temperature:	-20 ... +60 °C
Relative humidity:	Max. 75%, no condensation
Altitude:	Up to 2000 m ASL

Electrical Safety	
Measuring category:	CAT III, 250 V
Pollution degree:	2
Protection category:	II

Electromagnetic Compatibility (EMC)	
Interference emission / interference immunity:	EN 61326-1: 2013 and EN 61326-2-2: 201 respectively

Mechanical Design	
Protection category:	IP 20
Dimensions (W × H × L):	Emitter: 160 × 85 × 35 cm Receiver: 210 × 50 × 35 cm
Weight:	Emitter: 166 g Receiver: 78 g (without battery)

Set of Test Probes	
Fuse:	Superflink (FF) 10 A, 600 V, 6.3 × 32 mm
Measuring category:	CAT III 1000 V, CAT IV 600 V

MICRO-CENTURION II

Microohmmeter



With Software

Microohmmeter for up to 200 A for testing contact and connection resistance

FEATURES:

- Extremely accurate
- Automatic measuring range selection from 0.00 µΩ to 5 Ω
- Internal memory for measurement results
- "Single key" operation
- Safety and protection circuitry / emergency off
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Type	Article
Micro-Centurion II	M681E

MICRO-JUNIOR 2

Portable Microohmmeter



With Software

Portable microohmmeter for up to 10 A for testing contact and connection resistance, with a large measuring range of up to 400 kΩ

FEATURES:

- Highly accurate thanks to integrated thermovoltage compensation
- Automatic measuring range selection from 0.00 µΩ to 400 kΩ
- Battery operation – more than 2000 measurements are possible
- Integrated printer
- Internal memory for measurement results
- Safety and protection circuitry / emergency off
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Type	Article
Micro-Junior 2	M681A

TR-MARK III

Turn Ratio Meter



With Software

Measuring instrument for checking the turn ratio at single and 3-phase transformers in manufacturing and service applications

FEATURES:

- Measurement of voltage, transformation ratio, current and phase shift
- Extended measuring range for measurements at power transformers, as well as current and voltage transformers
- Automatic test voltage range
- Very quick measurement thanks to one-time only connection
- Outstanding accuracy and only minimal loading of the device under test
- Data exchange via USB stick
- Integrated printer
- High-performance protection circuitry / emergency off
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Type	Article
TR-MARK III	M681U

T-REX

Voltage Vector Measuring Option



With Software

3-phase voltage vector measuring option for the TR-Mark III

FEATURES:

- Read-out of a pure “3-phase sinusoidal wave”
- Automatic selection of test voltage frequency
- One-time only hook-up to the transformer with minimal loading of the device under test
- Measurement of phase relationships other than 30 degrees or multiples thereof
- Measurement of phase-shifting transformers
- Measurement of converter transformers
- Self-calibration
- Safety and protection circuitry
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software (**see chapter 06 – Software**)

Type	Article
T-Rex	M681D

TR-1 / TR-1P

Turn Ratio Meter



With Software

Portable measuring instrument for checking the turn ratio at single-phase transformers in manufacturing and service applications

FEATURES:

- Mains-independent measuring instrument / battery operation (approx. 1000 measurements)
- Rechargeable with mains power or optional DC automotive adapter
- Test current of up to 1 A for CT tests
- Integrated printer (in type TR-1P)
- Fully automated continuous operation
- Internal memory for the last 50 measurement results
- RS 232 port with optional adapter
- Pass/fail function
- Comparison with up to 16 transformer ratios
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Type	Article
TR-1	M681R
TR-1P	M681K

WR14

Microohmmeter



With Software

Microohmmeter for up to 15 A for testing contact, connection and winding resistance at inductances of up to 1500 Henry

FEATURES:

- Battery and mains operation
- Demagnetization function for transformers and automatic discharging function
- Optical and acoustic indication of discharging status
- 2 independent measuring channels, 2 temperature channels
- Data storage for up to 10,000 measurements
- Data exchange via USB stick
- Color touch-screen
- Integrated printer
- Emergency-off pushbutton – power off and discharging begins
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**
- **Optional**: heat-run test software (AHRT 01) for WR14 / WR50 / WR100

Type	Article
WR14	M681W

WR50-12 / WR50-13

Microohmmeter



With Software

2/3-channel microohmmeter for up to 50 A / 50 V for testing contact, connection and winding resistance at inductances of up to 1500 Henry in the high and medium-voltage ranges, as well as continuity testing and length measurement for cables and cable shielding (transformers, generators, motors)

FEATURES:

- High-power DC supply (50 A / 50 V)
- Demagnetization function for transformers and automatic discharging function
- Extremely large measuring range from 0.00 µΩ to 100 kΩ, adjustable charging current
- 2 measuring channels (3 measuring channels with WR50-13)
- 3 temperature channels (with automatic resistance correction)
- Optical and acoustic indication of discharging status
- Data transmission to internal printer at selectable time intervals
- Data storage for up to 10,000 measurements
- Data exchange via USB stick
- Color touch-screen with background illumination
- Safety and protection circuitry / emergency off
- Rugged, lightweight, water-proof carrying case
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Heat-run test software (AHRT 01)

- Option for WR50, WR100 and WR14 microohmmeters

Type	Article
WR50-12	M681M
WR50-13	M681N

WR100-12R / WR100-13R

Microohmmeter



With Software

2/3-channel microohmmeter in 19" rack for up to 100 A / 50 V for testing contact, connection and winding resistance at inductances of up to 1500 Henry in the high and medium-voltage ranges, as well as continuity testing and length measurement for cables and cable shielding (transformers, generators, motors)

FEATURES:

- High-power DC supply (100 A / 50 V)
- Demagnetization function for transformers and automatic discharging function
- Extremely large measuring range from 0.00 µΩ to 100 kΩ, adjustable charging current
- 2 measuring channels (3 measuring channels with WR100-13R)
- 3 temperature channels (with automatic resistance correction)
- Optical and acoustic indication of discharging status
- Data storage for up to 10,000 measurements
- Data exchange via USB stick
- Color touch-screen with background illumination
- Warning output for transformer under test
- Emergency-off pushbutton – power off and discharging begins
- Free T-Base Pro analysis software **(see chapter 06 – Software)**

Heat-run test software (AHRT 01)

- Option for WR100, WR50 and WR14 microohmmeters

Type	Article
WR100-12R	M681Y
WR100-13R	M681Z

TEST INSTRUMENTS 04

Test instruments for testing the electrical safety of electrical equipment at workstations and in production.

The fulfillment of legal requirements such as the German ordinance on industrial safety and health, Directive 2009/104/EC, medical device regulations and product safety law necessitates comprehensive measurements and testing in accordance with the technical stipulations set forth in EN and IEC standards, for example:

- As an equipment manufacturer per IEC / EN 61010, 60601, 60950, 60335, 60065, 62368-1, 62911
- For service work or as the operating company
  - For electrical equipment per DIN VDE 0701-0702 / EN 50678 / EN 50699
  - For medical devices per IEC 62353
  - For welding units per IEC 60974-4

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SECUTEST ST BASE IQ, ST PRO IQ

Universal test instrument for testing the electrical safety of electrical devices in accordance with Directive 2009/104/EC, MPG



SECUTEST ST BASE
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SECUTEST ST PRO
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SECUTEST ST PRO BT COMFORT
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SECUTEST

Universal test instrument for testing the electrical safety of electrical devices in accordance with Directive 2009/104/EC, MPG



SECUTEST SIII+ / SIII+ H
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SECULIFE

Universal test instrument for testing the electrical safety of electrical devices in accordance with Directive 2009/104/EC, MPG



SECULIFE ST HV
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METRALINE PAT

Test instrument for checking the effectiveness of protective measures in electrical devices in accordance with DIN VDE 0701-0702 and Directive 2009/104/EC



METRALINE PAT
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METRATESTER

Test instrument for testing the electrical safety of electrical devices per DIN VDE 0701-0702



METRATESTER 5+
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METRATESTER 5+ 3P
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MINITEST

Test instrument for DIN VDE 0701-0702, for testing and measurement of repaired or modified devices



MINITEST PRO
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MINITEST MASTER
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MINITEST 3P Master
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SECUTEST

Workshop test panels



SECUTEST 21F
PAGE 04 - 9

Type	MINITEST		METRA-TESTER 5+	METRALINE PAT	SECUTEST*	
	PRO	MASTER 3P MASTER			ST BASE / ST PRO	SECUTEST SIII+ HV SECULIFE ST HV
						
Article No.	**M712D**	**M712U M712X**	**M700D**	**M711A**	**M707 ... M694 ...**	**M7010 M693C**
Applications, Target Groups						
Directive 2009/104/EC, VDE 0701-0702, BetrSichV (German ordinance on industrial safety and health)	■	■	■	■	■	■
For trained persons	■	■	–	■	■	■
Repairs and service	–	–	■	■	■	■
Production	–	–	–	–	–	■
Tool cribs	–	–	■	■	■	–
Medical technology: IEC 62353	–	–	–	–	■	■
Medical technology: IEC 60601 (SFC conditions)	–	–	–	–	–	■
Welding technology, IEC 60974-4	–	–	–	–	■	–
USB (m = master, s = slave)	s	s	–	s	m, s	–
Ethernet	–	–	–	–	–	–
RS 232C	–	■	–	–	–	■
Test sequences	–	–	–	–	9, fixed per standard, changeable assignment	6 (9) per standard
Data memory (DUTs)	–	2000 measured values	–	–	Approx. 50,000	125
Software (optional)	See chapter 6 for complete information.					
Functions / Measurements						
Visual inspection	–	–	–	–	■	■
Protective conductor resistance	200 mA				200 mA / 10 A / 25 A***	
Insulation resistance	■	■	■	■	Adjustable voltage	
Leakage Current Test Method d = direct, E = equivalent, Δ = differential						
Protective conductor current	Δ (AC)	Δ (AC)	E, Δ (AC)	E, Δ	E, Δ (AC), d	E, Δ (AC)
Device leakage current	–	–	–	–	d (AC, DC, RMS) E, Δ (AC)	d (AC, DC, RMS) E, Δ (AC)
Touch current	d (AC)	d (AC)	d (AC)	d	d (AC, DC, RMS) E, Δ	d (AC, DC, RMS)
Leakage current from applied part	–	–	–	–	E (AC), d	E (AC)
Patient leakage current	–	–	–	–	d (AC, DC, RMS)	d (AC, DC, RMS)
Function Test U = line voltage, I = current consumption, P = power, PF = power factor						
	–	–	U, I	U, I, P, PF		
Other Measurements						
High-voltage test, DC	–	–	–	–	–	■**
Residual current test (time)	–	–	–	–	■	–
Voltage measurement,	–	–	–	■	■	■
Temperature: Pt 100/1000 (optional)	–	–	–	–	–	■
Miscellaneous						
Display	2-line LCD		Customer-specific	Black and white	Color display	Black and white dot matrix
Operation	Rotary switch, save key		Rotary switch	Membrane keys	Rotary switch, scroll keys / touch option (Secutest ST Pro only)	
Mains power	230 V / 50 Hz		230 V / 50 Hz	230 V / 50 Hz	90 V - 250 V 40 Hz - 400 Hz	230 V / 50 Hz 115 V / 60 Hz

* Other product variants and country-specific versions upon request
** Option
*** Depending on product variant

SECUTEST ST BASE / PRO

Test Instruments for Measuring the Electrical Safety of Devices



SECUTEST ST BASE



SECUTEST ST PRO



SECUTEST ST PRO BT COMFORT

product design award 2014

I-NOVO AWARDS 2015 DESIGN

IZYTRON IQ

Including IZYTRONIQ software:
Measuring and test instruments with IQ work more intelligently, can be used more flexibly, can deal with additional types of objects and support innovative test functions.

IZYTRONIQ not only automatically detects and manages interconnected test instruments, it also queries the test instrument's respective scope of functions.

IZYTRONIQ makes it possible to use measuring and test instruments in an entirely new way for multiple applications. Simplified import and export of test data, synchronization of memory structures and convenient generation of test reports are just a few of the high-performance features.

Reliable, comprehensive and efficient testing of the electrical safety of:

- Electrical devices per Directive 2009/104/EC, DIN VDE 0701-0702 including extension cords and PRCDs, DIN EN50678*, DIN EN50699* (*standards in implementation)
- Electrical medical devices per DIN EN 62353 and GOST R (ГОСТ Р) 62353
- Arc welding equipment per IEC/EN 60974-4

Highlights:

- **TEST SEQUENCES**
  9 preconfigured test sequences for quickly testing operating equipment
- **EASY OPERATION**
  Quick access to measuring and test functions via the rotary switch with two operating levels, direct selection keys, softkeys and touchscreen option
- **DATA MANAGEMENTS & STORAGE CONCEPT**
  Extensive data management and storage concept for automated test sequences and individual measurements – for up to 50,000 data records
- **AUTOMATIC CONNECTION DETECTION**
  Automatic DUT connection and protection category detection
- **CLEAR DISPLAY**
  High-resolution, brilliant 4.3" TFT color display
- **RUGGED HOUSING**
  Compact, impact-resistant housing with integrated rubber protector
- **MULTIPLE MEASUREMENT**
  Unique multiple measurement permits convenient recording of several measuring points.
- **UNIVERSAL INTERFACE**
  For data entry (2 ea. USB A) and data exchange (1 ea. USB B), report and barcode printing with compatible printers
- **USER-FRIENDLY**
  Suitable for use by electro-technically trained persons
- **HTML REPORT**
  Test report as HTML file on USB flash drive
- **PUSH-PRINT FUNKTION***
  The results of an individual test can be simply and conveniently transferred to the application software.
- **OBJECT RELOCATION***
  Structure elements, including subordinate elements, can be moved within the test object database in the test instrument.
- **2-TREE STRUCTURE***
  The instrument's database tree includes a "Customer" as well as a "Location" tree view.

Features and functions:

- Measurement type, connection type and measuring method can be selected with a key
- Selectable leakage current measurement method: direct/differential/alternative
- Testing of protective conductor resistance at DUTs with PRCDs
- Testing of permanently connected devices and 3-phase devices **
- Voltage measurement up to 300 V **
- Testing of single and multi-phase extension cords **
- Including IZYTRONIQ report and data exchange software
- Extensive setting options for international use (language, keyboard, character set, date, time)

SECUTEST ST BASE

Scope of delivery:

- Test instrument
- Mains power cable
- Test probe, 2 m, not coiled
- 1 USB cable
- 1 plug-on alligator clip
- IZYTRONIQ Business Starter
- DAkkS calibration certificate in D/GB/FR

Standard Model	Article
SECUTEST ST BASE	M707A

SECUTEST ST PRO

Scope of delivery:

Same as SECUTEST ST BASE plus:

- KS17-ONE cable set for voltage measuring inputs
- DB+ Z853R function expansion

Standard Model	Article
SECUTEST ST PRO	M707B

SECUTEST ST PRO BT Comfort

Scope of delivery:

Same as SECUTEST ST PRO plus:

- Bluetooth
- DB Comfort Z853S function expansion

Standard Model	Article
SECUTEST ST PRO BT Comfort	M707C

* Included with DB Comfort
** Required depending on model and/or optional accessory

SECUTEST ST BASE / PRO / PRO BT COMFORT

IQ

SECUTEST ST BASE

- 200 mA (+/–, ±, ~) test current for the protective conductor test
- German user interface
- Earthing contact mains connection and test socket
- DAkkS calibration certificate in D/GB/FR
- IZYTRONIQ Business Starter

Options:

- Bluetooth
- Country variants
- Database expansions:
  - **DB+ Z853R**
    For bidirectional data exchange and for generating personalized test sequences. See SECUTEST PRO, functions expansion.
  - **DB Comfort Z853S**
    See features package for SECUTEST ST PRO BT

SECUTEST ST PRO

Same as SECUTEST ST BASE plus:

- Connection of a 2nd test probe for measurement between any two measuring points, e.g. protective conductor resistance, insulation resistance or equivalent leakage current
- Touchscreen for data entry at the display
- Electrically isolated connector sockets for voltage measurements
  - For measuring SELV / PELV
  - For connecting an AT3-IIIE / AT3-IIS
  - For connecting a **WZ12C** current clamp
  - For connection to SECUTEST Clip for leakage current measurement
  - For connecting a SECULOAD
- **DB+ Z853R function expansion**
  - Remote control is possible with PC software
  - Additional database elements: property, building, floor and room – in order to better be able to structure comprehensive data – plus additional department and cost center fields as well
  - RFID transponder, read/write **(Z751R,S,T)**, with SCANBASE RFID Z751E (UID or memory depending on how the reader is programmed)
  - XML data export to a USB stick
  - Data import of all test object master data from IZYTRONIQ, or from a USB stick
  - User-defined test sequences with the help of IZYTRONIQ

SECUTEST ST PRO BT Comfort

Same as SECUTEST ST PRO plus:

- Bluetooth
- **DB Comfort Z853S function expansion**
  - User-defined test sequences – increased to 24
  - Relocation of test objects – moving (medical) devices within the tree can be initiated by pressing and holding the respective element in the tree display.
  - Touch-edit – "editing" of a (medical) device can be started by pressing and holding the respective element of the detail display in the main window.
  - Auto-store – results of automatic testing can be saved immediately under the selected test object.
  - Push-print – test mode in which data are transmitted directly to the connected PC instead of being stored at the tester.
  - Quick edit – when entering a new test object, all other fields can be filled out immediately after entering the ID number.
  - New "medical" database object – device with extended entry options.
  - Searches started with the "Search All" softkey now search the new "UDI" field (unique device identification) at medical devices as well.

	SECUTEST		
	ST BASE	ST PRO	ST PRO BT COMFORT
	M707A	M707B	M707C
10 A R_{PE} test current	–	■	■
Touchscreen keyboard	–	■	■
Second test probe	–	■	■
Voltage measuring inputs	–	■	■
Antimicrobial properties	–	■	■
Database expansion	❑	■	■
DB Comfort	❑	❑	■

Customer-specific variants upon request

❑ Optionally available

Packages		Starter Package SECUTEST ST BASE	Profi Package SECUTEST ST PRO	Welding Package SECUTEST ST PRO	Comfort Package SECUTEST ST PRO
Article	Article No.	M708A	M708B	M708D	M708C
SECUTEST		ST BASE	ST PRO	ST PRO	ST PRO
EL1	Z723A	■	■	■	■
SK2, 2nd probe, 2 m	Z745D	–	■	■	■
SK5, 2nd probe, 5 m	Z745O	–	–	–	–
Sortimo Boxx	Z503D	■	■	2x ■	■
Sortimo insert for Secutest	Z701D	■	■	■	■
Sortimo insert for adapter	Z701E	–	–	■	–
Brush probe	Z745G	■	–	–	–
Barcode reader (2D scanner)	Z751A	–	■	–	■
Thermal printer	Z721S	–	–	–	–
AT16-DI	Z750A	–	–	■	–
CEE16/32 adapter cable	Z750F	–	–	■	–
SECULOAD-N	Z745R	–	–	■	–
IZYTRONIQ		Business Advanced	Business Professional	Business Professional	Business Professional

SECUTEST SIII+ H / SECULIFE ST HV

Universal Test Instrument



SECUTEST SIII+ H
with SECUTEST SI+



SECULIFE ST HV
with SECUTEST SI+

Universal test instrument for testing the electrical safety of electrical devices in accordance with safety legislation, medical device regulations and Directive 2009/104/EC, as well as testing for final inspection in production

Automatic test sequences per:

- VDE 0701-0702, testing of electrical devices
- IEC 62353, testing of electrical medical devices
- KA01: IEC 60601, routine testing of electrical medical devices (optional/configurable)
- IEC 60335, routine testing of household appliances
- IEC 61010, routine testing of laboratory equipment
- IEC 60950, 60065, 62368-1, 62911, routine testing of IT equipment

Expanded functionality:

- Menu-driven test sequences in compliance with the standards including automatic detection of protection categories I + II
- Automatic adaptation to either 110 V / 60 Hz or 230 V / 50 Hz mains power
- Convenient memory and report generating functions
- Expanded data storage and report generation via optional, external memory
- Expandable with optional accessories for 3-phase devices
- Application-specific configuration

Plus the following with SECULIFE ST HV:

- Option for connecting up to 10 applied parts

Standard models available from stock:

The SECUTEST SIII+H (M7010-V013) is equipped with following features:

- **KB01:** internal memory for 125 test results (entry of ID number and designation via barcode/RFID)
- **KE01:** direct printing
- **KD01:** detection of probe at protective conductor

The SECULIFE ST HV (M693C) is equipped with the following features:

- **F02:** includes high-voltage test up to 6000 V_{DC} (at protection category II devices)
- **G01:** AC test current for 25 A protective conductor measurement
- **KA01**: IEC 60601, routine testing of electrical medical devices (optional/configurable)

Scope of delivery:

- Test instrument
- Probe cable with test probe / alligator clip
- DAkkS calibration certificate

See optional accessories beginning on Page 04 - 10

Type	Article
SECUTEST SIII+ H	M7010-V013
SECULIFE ST HV	M693C

* Other variants upon request

METRALINE PAT

Test Instrument for Testing in Accordance with DIN VDE 0701-0702



METRALINE PAT



Testing the electrical safety of electrical equipment in accordance with Directive 2009/104/EC

The test instrument is intended for fast, safe measurement of repaired or modified electrical devices and for periodic testing in accordance with DIN VDE 0701-0702.

The following are measured in accordance with the regulations:

- Protective conductor resistance (test current: +/- 200 mA DC)
- Insulation resistance
- Protective conductor current for protection category I devices
- Touch current for protection category II devices
- Voltage in SELV circuits

Measuring methods:

- Equivalent leakage current
- Differential current

Bluetooth and USB ports:

Data interface for direct read-out of measurement data after each individual test. By pressing the key, the respective measured value is first made available for transmission via the USB or Bluetooth port.

For transmission via Bluetooth, an Android app is available for receiving and processing the data.

The data can be subsequently transferred from the Android app to a PC, where they can be imported into IZYTRONIQ report generating software. Data can then be stored and managed at the PC, comments can be added and reports can be generated.

Features:

- Testing in accordance with Directive 2009/104/EC, DIN VDE 0701-0702
- Quick selection of individual measurements via direct selection keys
- Automatic limit value adjustment (protective conductor, insulation, equivalent leakage current)
- 2-pole measurement (low-resistance, insulation, equivalent leakage current, voltage)
- Testing of permanently connected devices is possible
- Clear-text operation with schematic diagrams and green/red LED display for go/no-go
- Large high-contrast display
- Testing of the mains connection for PE connection and automatic shutdown in case of dangerous residual current at the device under test
- Finger contact for testing protective conductor potential
- Short-circuit test for the device under test
- Quick mains polarity reversal with load monitoring
- Quick processing of all active tests including function test with TRMS power display in just a single step. Standby measurement
- Bluetooth and USB ports for measurement data transmission
- Compact design, minimal weight

Scope of delivery:

- Test instrument
- Red measurement cable with safety plug and test probe, 2 m
- Mains cable, earthing contact – IEC 60230, 16 A, 1.5 m
- Factory calibration certificate
- Operating instructions

Type	Article
METRALINE PAT	M711A

METRATESTER 5+

Safety of Electrical Devices



Metratester 5+



Metratester 5-F-E

Compact instrument for testing the electrical safety of electrical devices per DIN VDE 0701-0702

FEATURES:

- Large digital LCD panel
- Mains connection testing with finger contact and indicator lamp
- Differential current measurement per DIN VDE 0701-0702
- All measured values appear clearly at large digital display
- Exceeded limit values are indicated optically and acoustically
- Dimensions (W x H x D): 190 x 140 x 95 mm, weight: approx. 1.3 kg
- Panel mount variant: **METRATESTER 5-F-E (M700T)**
- **Active and passive tests at separate test sockets**

Test	Measuring Range
Protective conductor resistance	0 ... 19.99 Ω
Insulation resistance	0 ... 19.99 MΩ
Equivalent leakage current	0 ... 19.99 mA ~
Absence of voltage	0 ... 1.999 mA ~
Residual current	0.01 ... 19.99 mA ~
Line voltage	207 V ... 253 V ~
Load current	0 ... 16.00 A ~

SCOPE OF DELIVERY:

- Test instrument
- Factory calibration certificate

Type	Article
METRATESTER 5+	M700D
METRATESTER 5-F-E	M700T

METRATESTER 5+ 3P

Test Case



Test case with M700D for testing devices in accordance with DIN VDE 0701-0702 – can also be used as a workshop test panel per DIN EN 50191

For testing the electrical safety of single and 3-phase electrical devices in accordance with the regulations:

The test case complies with “guidelines for equipment required for electrical installation operations” issued by the German Federal Committee for Electrical Installations, ZVEH, WFE and electrical power utilities.

FEATURES:

- **Mains connection:** The test case can be connected either to an earthing contact outlet with the two included power cables or to a 16 A CEE mains outlet.
- **Test types:** DIN VDE tests without mains operation: protective conductor resistance, insulation resistance, equivalent leakage current; DIN VDE tests with mains operation at all single and 3-phase devices – differential current, contact current. Function tests with measurement of current consumption and voltage in phases L1, L2 and L3. Protective conductor measurement is performed correctly in accordance with DIN EN 50191.
- **Convenient testing:** All safety and function tests are executed in a practical manner by switching mains voltage or the individual phases to the device under test with selector switches.
- **Rugged case design:** Test case consisting of an aluminum shell and a removable, lockable lid, ample space is provided for connection adapters and operating instructions.
- **Dimensions:** approx. 380 x 300 x 220 mm, weight: approx. 8 kg

SCOPE OF DELIVERY:

- Test case including test instrument
- Mains cable with earthing contact plug and coupling socket
- Mains cable with 5-pole CEE 16 A mains plug and coupling socket
- See optional accessories beginning on Page 04 - 10
- For training offerings see “Training Center”, on Page 10 - 2.

Type	Article
METRATESTER 5+ 3P	M700K

SECUTEST 21F

Workshop Test Panel



Workshop test panel for testing devices in accordance with DIN VDE 0701-0702

The SECUTEST 21F test panel has been designed for the setup of test stations at shops specialized in electrical work. It's used for measuring and testing electrical devices after repair or modification, as well as for periodic testing in accordance with DIN VDE 0701-0702. The test panel is designed for wall mounting. It's equipped with a mains switch with undervoltage trigger and lock. Load currents of up to 25 A and line voltages of up to 500 V can be measured. Compliance with DIN EN 50191 also assures flawless protective conductor measurements.

- Dimensions: 532 x 792 x 179 mm
- Weight: approx. 24 kg

In accordance with the guidelines for "workshop equipment for electrical installation operations" issued by the ZVEH / VDEW

OPTIONAL ACCESSORIES:

VL2E test adapter: testing of protective conductor and insulation resistance at devices and extension cords

Type	Article
SECUTEST 21F	M601A

MINITEST PRO

Test Instrument for DIN VDE 0701-0702



Test instrument for **DIN VDE 0701-0702**, for testing and measurement of repaired or modified devices

Features:

- Measured values appear at a large digital display.
- USB interface for data logging
- Extensive safety features
- RCCB in the plug on the mains cable
- Data transfer to ETC – free of charge after registering at myGMC

SCOPE OF DELIVERY:

- Test instrument
- Probe cable
- USB cable

Type	Article
MINITEST PRO	M712D

MINITEST MASTER
MINITEST 3P MASTER

Test Instrument for DIN VDE 0701-0702



MASTER



3P MASTER

MINITEST MASTER (M712U)

Same as MINITEST PRO plus:

- Memory for 2000 tests with up to 10 measured values each

SAME SCOPE OF DELIVERY as **PRO**

MINITEST 3P MASTER (M712X)

Same as MINITEST MASTER plus:

- 16 A CEE test socket and mains outlet, single and 3-phase
- 32 A CEE test socket and mains outlet, single and 3-phase

SCOPE OF DELIVERY:

Same as **MASTER** plus:

- Adapter: CEE 32 to earthing contact
- Adapter: CEE 32 to 16 x 3
- Adapter: CEE 32 to 16 x 1
- Adapter: CEE 32 to 32 x 1
- Data transfer to ETC – free of charge after registering at myGMC

Type	Article
MINITEST MASTER	M712U
MINITEST 3P MASTER	M712X

EL1 / PRO-CH

Adapter



EL1



PRO-CH

Adapter for Testing Single-Phase Extension Cords

- Connector cable to the test instrument with handle/ socket for plug inserts
- PRO-SCHUKO plug insert
- Plug insert for non-heating devices
- EN60320 C13 to EN60320 C6 plug adapter (non-heating devices, 10 A to 2.5 A IBM plug)
- Additional country-specific inserts available as well. Cannot be used for high-voltage test!

PRO-CH plug insert

Plug insert for using the EL1 adapter in Switzerland

Type	Article
EL1	Z723A
PRO-CH	GTZ3225000R0001

SECU-CAL 10

Calibration Adapter



Calibration adapter for all test instruments for testing devices

Features:

The following measured values can be calibrated with the adapter:

- Insulation resistance
- Equivalent leakage current
- Residual current
- Touch current
- Protective conductor resistance (test current: max. 1 A)

Type	Article
SECU-cal 10	Z715A

SECULOAD N

Test Adapter



Test adapter for testing welding units

Features:

- Peak-value rectifier per IEC 60974-4 (arc welding equipment)

Type	Article
SECULOAD N	Z745R

SECUTEST / SECULIFE Fuse Set 10

Fuse Set for Secutest/Seculife Series





Fuse set consisting of:

- 10 fine-wire fuses, 250 V / 250 mA, medium time-lag M 5 x 20 mm

Type	Article
M7050 fuse set 10	Z747A

OVERVIEW

Three-Phase Current Adapters in Combination with Test Instruments

	Adapter						
	AT3-III-E	AT3-IIIS	AT3-IIIS 32	AT16-DI	AT32-DI	VL2E	Z745A
Measuring Method	These adapters switch mains voltage through to the DUT – the function test is evaluated manually by the inspector (pass/ fail).					–	–
Function test							
Single-phase consumers	■	–	–	–	–	■	■
Single-phase extension cords	■	–	–	–	–	■	■
3-phase extension cords	■	–	–	–	–	■	–
Protective conductor resistance	■	■	■	■	■	■	■
Insulation resistance	■	■	■	■	■	■	■
Protective conductor current, equivalent leakage current	■	■	■	■	■	■	■
Protective conductor current, differential current	■	■	■	■	■	–	–
Protective conductor current, direct	■	■	■	■	■	–	–
Touch current	■	■	■	■	■	–	–
Test instrument							
SECUTEST BASE (10), ST BASE	direct only	direct only	direct only	■	■	■	■
SECUTEST PRO / PRO BT COMFORT (IQ) / ST PRO / ST PRO BT COMFORT	■	■	■	■	■	■	■
SECUTEST SII+ / SIII+ / S2N+ (10)	■	■	■	–	–	■	■
SECULIFE ST	■	■	■	60601 only	60601 only	■	■
SECULIFE ST BASE (BASE25) / PRO (IQ)	■	■	■	■	■	■	■
METRATESTER 5+	–	–	–	–	–	■	■
METRALINE PAT	–	–	–	–	–	■	■
MINITEST PRO / MASTER	–	–	–	–	–	■	■

VL2E

Adapter



Adapter for passive testing of protective conductor and insulation resistance at devices and extension cords

The test adapter is intended for the performance of measurements and tests at electrical devices and extension cables with CEE plug connectors in combination with test instruments in accordance with the following standards: testing after repairs or periodic testing per DIN VDE 0701-0702.

The following quantities can be tested with the adapter in combination with test instruments which are intended for the performance of the respective tests:

At electrical devices:

- Protective conductor resistance
- Insulation resistance (measurement of L1, L2, L3 and N short-circuited to PE)
- Equivalent leakage current

And at extension cords:

- Easy function test for single and 3-phase extension cords including testing for conductor continuity, short-circuiting and polarity reversal (clockwise phase sequence) with rotary selector switch using an insulation resistance measurement
- When performing tests, the adapter's connector cable is plugged into the test socket at the test instrument. The test instrument's probe cable is additionally plugged into the connector socket at the adapter when testing extension cords.

Type	Article
VL2E	Z745W

CEE ADAPTER Z745A

Adapter for 3-Phase Consumers



In combination with a test instrument for testing electrical devices, the Z745A CEE adapter can be used for quick and efficient testing of devices which are equipped with a CEE plug.

Features:

- CEE attachment outlets: 16 A/3-pole, 16 A/5-pole, 32 A/5-pole
- Safety sockets for 3-phase devices without permanently attached plug
- Protective conductor continuity test and insulation test for each phase, and combined phases, with rotary switch

Type	Article
CEE ADAPTER	Z745A

AT3-III-E

Adapter



Adapter for active and passive testing of 3-phase current consumers and extension cords in combination with safety testers

FEATURES:

- Testing of single and 3-phase consumers, as well as extension cords, in combination with external test instruments
- Additional protection during testing of defective devices with integrated residual current monitoring and shutdown
- Function test for automatic shutdown by pressing a self-test button
- Prevention of short-circuits and blown mains fuses during testing thanks to pre-testing stage
- Automatic adaptation to the program selected at the test instrument with transfer of measured values
- In combination with SECUTEST: testing of protective conductor resistance, insulation resistance, equivalent leakage current, dielectric strength, differential current, touch current
- Dimensions: 405 x 300 x 220 mm (with lid), weight: approx. 6.7 kg

Type	Article
AT3-III-E	Z745S

AT3-IIS / AT3-IIS32

Adapter



AT3-IIS



AT3-IIS32

Adapter for active and passive testing of 3-phase current consumers in combination with SECUTEST safety testers

The safety tester is used in combination with SECUTEST test instruments for testing 3-phase devices after repair, as well as for periodic testing (DIN VDE 0701-0702).

It allows for fully automated or manual testing in accordance with the menu-driven test sequences included with the test instruments, with transmission of test results to, and analysis at, SECUTEST test instruments.

Test types:

DIN VDE tests with mains operation (active)
Differential current, touch current

DIN VDE tests without mains operation (passive)

- Protective conductor resistance, insulation resistance, equivalent leakage current
- **AT3-IIS: Article: Z745T**
  Equipment: 5-pole 32 A CEE (max. 20 A) and 16 A CEE
  Dimensions: 290 x 120 x 105 mm, weight: 2.4 kg
- **AT3-IIS32**: **Article: Z745X**
  Equipment: 5-pole 32 A CEE (max. 40 A) and 16 A CEE, single-phase earthing contact outlet
  Dimensions: 285 x 220 x 128 mm, weight: 4.15 kg

Type	Article
AT3-IIS	Z745T
AT3-II S32	Z745X

AT16-DI / AT32-DI

Adapter



16 or 32 A 3-phase current adapter

CEE adapter for quick, efficient testing of devices which are equipped with 5-pole 16 A / 6h or 32 A / 6h CEE plugs.

The adapter is connected to a test instrument designed for testing portable devices in accordance with DIN VDE 0701-0702 or IEC 601, which is only equipped with an earthing contact outlet for connecting the device under test, and is capable of directly measuring protective conductor current.

The following tests can be performed on devices with CEE plugs with the help of the adapter:

- Testing of protective conductor continuity
- Insulation test
- Equivalent leakage current measurement
- Differential current measurement, L1-L2-L3-N
- Function test

Suitable for the following instruments: Secustar FM, Seculife SB and Secutest S2N+W, SECUTEST BASE / PRO

Type	Article
AT16-DI	Z750A
AT32-DI	Z750B

CEE16 / CEE32

Adapter cable



Adapter cable, red 5-pole 16 A CEE plug to red 5-pole 32 A CEE coupling, 0.5 m, 5 x 1.5 sq. mm

Type	Article
CEE16/CEE32 adapter cable	Z750F

KS13

Cable Set



Cable set for connecting test instruments to the mains

Cable set for connecting test instruments to the mains without earthing contact sockets, and for connecting DUTs – consisting of:

- Coupling socket with 3 permanently connected cables
- 3 measurement cables, 3 plug-on pick-up clips
- 3 plug-on test probes

Type	Article
KS13	GTY3624065P01

SK2 / SK5

Probe Cable for Protective Conductor Measurement



SK2 : probe with test tip and 2 m probe cable (not coiled) suitable for high-voltage testing

SK2W: probe with test tip and 2 m probe cable (coil cord) suitable for high-voltage testing

SK5: 5 meter probe cable for protective conductor measurement

SK5-SW: 5 m probe cable for protective conductor measurement (cable plus software for SECUTEST SIII+ and SECUTEST S2N+W)

- Automatic recognition of changing measuring points as software upgrade
- Go/no-go indication display

Type	Article
PC2	Z745D
SK2W	Z745N
SK5	Z745O
SK5-SW	Z745K

RS 232 – USB CONVERTER

Interface Converter



The interface converter is used to connect test instruments and multimeters with appropriate adapters including an RS 232 port to PCs which are equipped with USB ports only.

Type	Article
RS 232 – USB converter	Z501L

SET OF MEASUREMENT CABLES



Set of 2 measurement cables, 4 mm, plugs, 1.0 m long, 1000 V CAT III, 19 A

- 2 cables, blue (Z746A)
- 2 cables / 1 red, 1 black (Z746B)

Type	Article
Measuring cable set, blue	Z746A
Measuring cable set, red/black	Z746B

CLAMPS

Current Sensor



WZ12C



SECUTEST CLIP

Current clamp sensor: WZ12C
1 mA ... 15 / ... 150 A AC, reversible

- 1 mA ... 15 A AC, 1 mV / mA
- 1 mA ... 150 A AC, 1 mV / A

SECUTEST CLIP leakage current clamp meter for SECUTEST PRO / SECULIFE ST BASE
0.1 mA ... 25 mA, 100 mV / mA

SCOPE OF DELIVERY:

- Current clamp sensor including permanently attached safety cable with connector plug

Type	Article
WZ12C	Z219C
SECUTEST CLIP	Z745H

Type	Measuring Range	CAT @ V	Wire Cross-Section	Transformation Ratio	Frequency Range	Intrinsic Uncertainty ± (% rdg.+ mA)
WZ12C	1 mA ... 15 A AC / 1 A ... 150 A AC	III at 300	15 mm dia.	1 mV / mA / 1 mV / A	45 ... 65 ... 500 Hz	3% + 0.15 mA / 2% + 0.1 A
SECUTEST CLIP	0.1 ... 25 mA			100 mV / mA	50 ... 1 MHz	±2.5%

BRUSH PROBE

Brush Probe



The brush probe is suitable for contacting exposed conductive parts which rotate or vibrate etc. during operation.

The brush is plugged onto the test probe.

- Leakage current measurement (touch current)
- Protective conductor resistance measurement

Type	Article
Brush probe	Z745G

PA4

Patient Connector Cable



Adapter cable for SECUTEST, SECULIFE ST for adapting the 2 mm connector sockets at the SECUTEST / SECULIFE ST to 4 mm sockets and plugs, 1.5 m long with 12 cables, each with 4 mm plug

Type	Article
PA4	Z745L

SV5

Test Probe Distributor



Distributor for connecting five 4 mm and five 2 mm test probes for measuring multiple, accessible housing parts or applied parts

Type	Article
SV5	Z745J

TEMPERATURE SENSORS

Standard Temperature Sensor



Standard PT 100/1000 temperature sensor for surface and immersion measurements

Type	Article
Z3409	GTZ3409000R0001
TF220	Z102A

SECUTEST SI+

Memory and Input Module



SECUTEST SI+

SECUTEST SI+ – memory and input module

Test results from the test instruments are transmitted to the SI+ module directly via the interface. Test results are saved on-site as clear-cut, reliably documented measurement and test reports with date and time. Stored data can be transferred to a PC at a later point in time independent of the test instrument.

- **Compatible:** SECUTEST S2N+ or S2N+10 and SECUTEST SIII+ or SECULIFE ST

Type	Article
SECUTEST SI+	M702G

BARCODE PRINTER

Barcode and Label Printer for Connection to a PC, Including Software



Z721E Barcode Printer

For the identification of equipment with barcode labels

Features:

- Prints smudge-proof, scratch resistant labels in all common sizes
- Ideal in combination with **Z720A** and **Z751A** barcode scanners
- MS Windows software

Label set

- **Z722D**: qty. x width: 3 x 24 mm / 1 x 18 mm / 1 x 9 mm, 8 m long
- **Z722E**: qty. x width: 5 x 18 mm, 8 m long

SCOPE OF DELIVERY:

- Barcode printer
- User's manual on CD
- Lithium battery
- Power pack and power cable
- USB cable
- 1 label set

Type	Article
Barcode printer	Z721E
Label set	Z722D
Label set	Z722E

REPORT PRINTER

Report Printer for Connection to the USB Master Port at the Test Instrument



Z721S Report Printer

Thermal printer for connection to the USB master port at the SECUTEST BASE / PRO test instrument, and for printing out test reports

SCOPE OF DELIVERY:

- Thermal printer
- User's manual on CD
- Lithium battery
- Power pack and power cable
- USB cable
- 1 roll of thermal paper

Type	Article
Report printer	Z721S
Thermal paper	Z722S

BARCODE READER/ SCANNER

Identification Accessories



Z751Abarcode scanner, same as Z720A but for instruments with USB port

For identifying devices and system components. Devices and system components can be logged by our test instruments, and acquired measured values can be allocated to them with the scanner. See our barcode and label printers for water-insoluble labels as well.

- **Scanning of 2D codes (e.g. QR codes)**
- Scanning of barcodes from considerable distances
- Variable barcode lengths
- Improved reading accuracy
- The barcode scanner is configured for use with the following codes: EAN13, CODE 39 and CODE 128 (other codes upon request)

Z720A 1D/2D barcode scanner for test instruments with RS 232 port

For identifying devices and system components. Devices and system components can be logged by our test instruments, and acquired measured values can be allocated to them with the scanner.

- Trouble-free scanning of all common barcode types

Z502F barcode reader, same as **Z720A** but with coil cable

Type	Article
Z720A (barcode scanner)	Z720A*
Barcode Profiscanner RS 232	Z502F*
Z751A (barcode scanner)	Z751A

* The SECUTEST (P)SI+ module must be retrofitted for connection to a SECUTEST (P)SI+ module manufactured during or before 2015 (up to serial number AZ..). Please contact our product support department in this regard at www.gmci-service.com.

SCANBASE/SCANWRITE RFID

RFID Reader/Scanner



RFID reader/scanner, for test instruments with USB or RS 232 port The RFID identification system is used to mark and identify tools and equipment. ID numbers can be written to RFID tags via a PC with the SCANWRITE.

The SCANWRITE and other SCANBASE RFID reading devices read out the code and forward it to our test instruments, in order to be able to allocate measured values and test results to the device under test in an unequivocal fashion.

Type	Article	Frequency	Standard	Connection
SCANBASE RFID (RFID reader/writer, USB, 13.56 MHz)	**Z751E**	13.56 MHz	ISO 15693	USB
SCANBASE RFID RFID reader/writer, RS 232	**Z751G**	13.56 MHz	ISO 15693	RS 232

Accessories: Z751D, E and G RFID readers are preprogrammed to read the following RFID tags:

Type	Article	Frequency	Standard	Layout	Qty.
RFID tag, ISO15693, 24 x 18 mm	**Z751R**	13.56 MHz	ISO 15693	22 mm, self-adhesive	500
RFID tag, ISO15693, 30 mm / 3 mm	**Z751S**	13.56 MHz	ISO 15693	30 mm with 3 mm hole	500
RFID tag, ISO15693, pigeon ring	**Z751T**	13.56 MHz	ISO 15693	Pigeon ring, 7.5 mm	250
RFID tag (125 kHz), shape as requested	**Z751U**	125 kHz	–	20 mm	100

POUCHES, CASES, COVERS

Accessories



F2000



F2010



F2020



SORTIMO BOXX



Z710H

F2000: **Universal carrying pouch**
Dimensions: 380 x 310 x 200 mm

F2010: Universal carrying pouch with flexible compartments

F2020: **Large universal carrying pouch**
Dimensions: 430 x 310 x 300 mm

SORTIMO BOXX GM: Plastic system case

Foam SORTIMO L-BOXX
Foam insert for SORTIMO L-BOXX GM with compartment for SECUTEST BASE / PRO, foam insert for SORTIMO L-BOXX GM with compartment for adapter

F710H: Protective front cover for SECUTEST BASE / PRO and SECULIFE ST BASE / BASE 25

Type	Article
F2000	Z700D
F2010	Z700G
F2020	Z700F
SORTIMO L-BOXX GM	Z503D
Foam SORTIMO L-BOXX	Z701D
Foam SORTIMO L-BOXX adapter	Z701E
Protective cover, SECUTEST / SECULIFE	Z710H

OVERVIEW

Test Instrument Accessories

Type	Article No.	MINITEST			METRATESTER 5+	METRATESTER 5+3P	SECUTEST					SECULIFE SB	SECULIFE ST	SECULIFE SR
		PRO	Master	3P Master			BASE (IQ)	PRO (IQ)	SIII+	S2N+ 10	3PL			
General Accessories														
SECUTEST SI+	M702G	–	–	–	–	–	–	–	■	■	–	–	■	–
RS 232 – USB converter	Z501L	–	–	–	–	–	–	–	■	■	■	–	■	–
AT3-IIIE	Z745S	–	–	–	–	–	■*	■	■	■	–	–	–	–
AT3-IIS	Z745T	–	–	–	–	–	■*	■	■	■	–	–	–	–
AT3-IIS32	Z745X	–	–	–	–	–	■*	■	■	■	–	–	–	–
AT16-DI	Z750A	–	–	–	–	–	■	■	–	–	–	■	■	■
AT32-DI	Z750B	–	–	–	–	–	■	■	–	–	–	■	■	■
SECU-cal 10	Z715A	■	■	■	■	■	■	■	■	■	■	■	■	■
VL2E	Z745W	■	■	–	■	■	■	■	■	■	–	■	■	■
EL1	Z723A	–	–	–	–	–	■	■	■	■	–	■	■	■
KS13	GTY3624065P01	■	■	■	■	■	■	■	■	■	■	■	■	■
SECULOAD-N	Z745R	–	–	–	–	–	■	■	■	■	■	■	■	–
CEE adapter	Z745A	■	■	–	■	–	■	■	■	■	–	■	■	■
PC2	Z745D	–	–	–	–	–	■	■	■	■	■	■	■	■
SK5	Z745O	–	–	–	–	–	■	■	■	■	■	■	■	■
WZ12C current clamp sensor	Z219C	–	–	–	–	–	–	■	■	■	■	■	■	■
SECUTEST CLIP	Z745H	–	–	–	–	–	–	■	–	–	–	–	–	–
Brush probe	Z745G	■	■	■	–	–	■	■	■	■	■	■	■	■
PA4 patient connector cable	Z745L	–	–	–	–	–	–	–	–	–	–	–	■	–
SV5 test probe adapter	Z745J	■	■	■	■	■	■	■	■	■	■	■	–	–
Z3409 temperature sensor	GTZ3409000R0001	–	–	–	–	–	–	–	■	■	–	–	■	–
Carrying Pouches														
F2000 universal carrying pouch	Z700D	■	■	■	■	■	■	■	■	■	■	■	■	■
F2010 universal carrying pouch	Z700G	■	■	■	■	■	■	■	■	■	■	■	■	■
F2020 large universal carrying pouch	Z700F	■	■	■	■	■	■	■	■	■	■	■	■	■
SORTIMO BOXX GM plastic system case	Z503D	–	–	–	–	–	■	■	–	–	–	–	–	–
Foam insert for SORTIMO L-BOXX GM SECUTEST BASE(10)/PRO	Z701D	–	–	–	–	–	■	■	–	–	–	–	–	–
Foam insert / adapter	Z701E**	–	–	–	–	–	–	–	–	–	–	–	–	–
SCANBASE / SCANWRITER RFID														
SCANBASE RFID USB	Z751E	–	–	–	–	–	■	■	–	–	–	■	–	–
SCANBASE RFID RS232	Z751G	–	■	■	–	–	–	–	■	■	■	–	■	–
Barcode Readers / Barcode Scanners / Barcode Printers / Report Printers														
Z720A (barcode scanner)	Z720A	–	■	■	–	–	–	–	■	■	■	–	■	–
Barcode Profiscanner RS 232	Z502F	–	■	■	–	–	–	–	■	■	■	–	■	–
Z751A (barcode scanner)	Z751A	–	–	–	–	–	■	■	–	–	–	■	–	–
Report printer	Z721S	–	–	–	–	–	■	■	–	–	–	–	–	–
Barcode printer	Z721E	–	–		–	–	■	■	–	–	–	–	–	–

* Only direct measurement of protective conductor current
** Accessory for Z503D

LABORATORY POWER SUPPLIES 05

Laboratory power supplies from Gossen Metrawatt, known as GOSSEN KONSTANTERs, combine modern circuit technology with a broad range of functions and absolute reliability.

Our KONSTANTERs can be ideally incorporated into demanding applications in the field of research and development, as well as into production and (continuous) test systems.

Due to their exceptionally short response times, our KONSTANTERs are especially well suited for generating complex test signals, or for superimposing low-frequency signals to the output via analog control inputs.
Data storage provided by SSP and SYSKON models makes it possible to save standardized or individualized test pulses, and to run the respective sequences automatically.

Depending upon the device, available interfaces include analog, RS 232, IEEE 488 (GPIB), USB and Ethernet.

In addition to power supply technology, GOSSEN METRAWATT also offers a range of electronic loads which are distinguished by short response times, programmability and an extensive scope of functions.

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LABORATORY POWER SUPPLIES

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05 - 4 Programmable Laboratory Power Supplies: 500 W ... 4500 W
05 - 6 Programmable Laboratory Power Supplies: 120 W ... 320 W
05 - 7 Computer Controlled Laboratory Power Supplies: 90 W ... 800 W
05 - 8 Overview Laboratory Power Supplies
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ELECTRONIC LOADS – SPL / SSL



SPL Series, 200 ... 400 W
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SSL 32EL Series, 150 ... 300 W
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SYSKON P SERIES



SYSKON P Series 500 ... 4500 W
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SSP 32N KONSTANTERS
SLP 32N KONSTANTERs



SSP 32N KONSTANTERS, 120 ... 320 W
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SLP 32N KONSTANTERS, 120 ... 320 W
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LABKON P SERIES

LSP 32K KONSTANTERS



LABKON P SERIES, 500 ... 800 W
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LSP 32K KONSTANTERS, 90 ... 108 W
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ACCESSORIES LABORATORY POWER SUPPLY

OEM POWER SUPPLIES



Interfaces and Other Accessories
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OEM Power Supplies
Page 05 - 10

SPL Series

Single-Channel, Programmable Electronic Loads



Series SPL devices (single-channel programmable load) are programmable electronic loads with outstanding dynamic control characteristics. They're used for loading direct voltage/current sources with constant current, resistance, voltage or power in an adjustable fashion. Their range of applications includes static and dynamic testing of power packs, batteries, PV modules, fuel cells, inductors etc.

FEATURES:

- 4 operating modes: CC, CV, CR and CP
- Adjustable current edges: 0.1 mA ... 4 A per µs
- 3 transient functions
- The load can be activated as of an adjustable voltage level
- Short-circuit and battery discharging functions
- Sense terminal + trigger input
- Memory for 7 sequences with up to 50 steps each (at least 10 µs per step)
- Low load voltage: < 0.6 V at max. current
- Load input on/off switching function
- Multifunctional, illuminated LCD panel
- Extensive safety functions: OV, OC, OP, OT, RV
- PC control via RS 232 port, or optional IEEE 488 interface or USB port
- SCPI command set

SCOPE OF DELIVERY:

- Benchtop instrument
- Mains power cable with earthing contact plug
- Operating instructions and SCPI Command Guide on CD-ROM
- RS 232 cable

OPTIONAL ACCESSORIES:

- IEEE 488 interface **(K890A)**
- USB port **(K891A)**
- 19" installation set **(Z990A)**
- Factory calibration certificate

Type	Article	Power	Voltage	Current	Resistance	Dimensions (W x H x D in mm)		Weight (approx. in kg)
		P_{Set} [W]	U_{Set} [V]	I_{Set} [A]	R_{Set} [Ω]	Benchtop Instrument	19" Rack	
SPL 250-30	K852A	0.001 ... 250.00	0.001 ... 80.000	0.0001 ... 30.000	0.0200 ... 2000	226 x 110 x 414	½19" x 2 HU x 350 + 45 mm	5.8
SPL 400-40	K853A	0.001 ... 400.00	0.001 ... 80.000	0.0001 ... 40.000	0.0200 ... 2000			
SPL 200-20	K854A	0.001 ... 200.00	0.001 ... 200.00	0.0001 ... 20.000	0.0666 ... 6660			
SPL 350-30	K855A	0.001 ... 350.00	0.001 ... 200.00	0.0001 ... 30.000	0.0666 ... 6660			

SSL Series

Single-Channel, Programmable Electronic Loads



Series SSL devices (single-channel system load) are programmable electronic loads with a maximum sink power of 150 or 300 W. They're used for loading direct voltage sources with constant current, resistance or power in an adjustable fashion. Their range of applications includes testing power packs, batteries, PV modules, fuel cells etc.

FEATURES:

- 3 operating modes: CC, CR, CP
- Setting selected by means of rotary switch and keypad
- PC control via optional interface adapter
- High resolution measurement of U, I and P
- Multifunctional, illuminated LCD panel
- Memory for 10 setting values with time regulated sequence control (at least 1 second per step)
- Extensive safety functions: OV, OC, OP, OT, RV
- Load on/off switching function

SCOPE OF DELIVERY:

- Benchtop instrument
- Mains power cable with earthing contact plug
- Operating instructions on CD-ROM

OPTIONAL ACCESSORIES:

- Interface adapter for USB **(K910B)**
- Interface adapter for RS 232 **(K910A)**
- Factory calibration certificate

For software refer to Page 06 - 13

Type	Article	Power	Voltage	Current	Resistance	Dimensions (W x H x D in mm)		Weight (approx. in kg)
		P_{Set} [W]	U_{Set} [V]	I_{Set} [A]	R_{Set} [Ω]	Benchtop Instrument	19" Rack	
32 EL 150 R 30	K850A	0.1 ... 150.0	0.001 ... 360.0	0.001 ... 30.00	0.01 ... 500.0	215 x 100 x 280	½19" x 2 HU x 243 + 45 mm	5.0
32 EL 300 R 30	K851A	0.1 ... 300.0	0.001 ... 360.0	0.001 ... 30.00	0.01 ... 500.0			

Accessories on Page 05 - 10

SYSKON P Series

Single-Channel, Programmable Laboratory Power Supplies





SYSKON P series KONSTANTERs (SYSTEM KONSTANTER) are single-channel, programmable laboratory power supplies for demanding professional use in R&D, production and test systems.

FEATURES:

Digital interfaces: USB, RS 232, GPIB (optional)

Analog interfaces: 2 trigger inputs, 3 signal outputs, control voltage inputs (5 V) for voltage and current, monitor voltage outputs (10 V) for voltage and current, sense terminals for auto-sensing operation at the power consumer

Display: 2 x 5-place LED display

Memory: 1700 memory locations for sequences, 15 memory locations for basic settings

Power output: auto-ranging, unipolar

Sink: dynamic up to 195 W continuous power

FUNCTIONALITY:

- Output power: 500, 800, 1500, 3000 and 4500 W
- Very short response times [as of < 2 ms]
- Very high setting resolution [1 mV, 1 mA, 1 ms]
- High setting accuracy [as of 0.05 % + 30 mV]
- High measuring accuracy [as of 0.05 % + 30 mV]
- Extensive protective functions [overvoltage, overcurrent, overtemperature, limits]
- Flexible programmability [large memory module, import/export of stored sequences and settings]
- Power factor correction for sinusoidal current consumption
- Sensing terminals for auto-sensing operation at the power consumer
- Load resistance display
- Min-Max values display
- Master-slave connection (series and parallel connection)

CORE APPLICATIONS

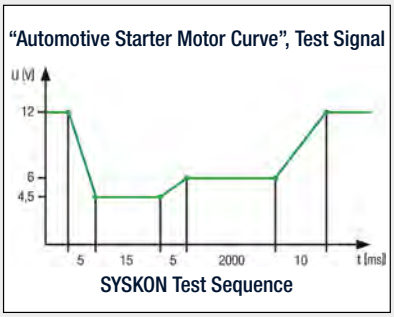
- Testing of electrical and electronic components
- Execution of electrical test pulses, e.g. for automotive applications
- Execution of long-term testing
- Incorporation into test systems (with analog or digital control)
- Power supply for sensitive devices, e.g. laser controllers

SCOPE OF DELIVERY:

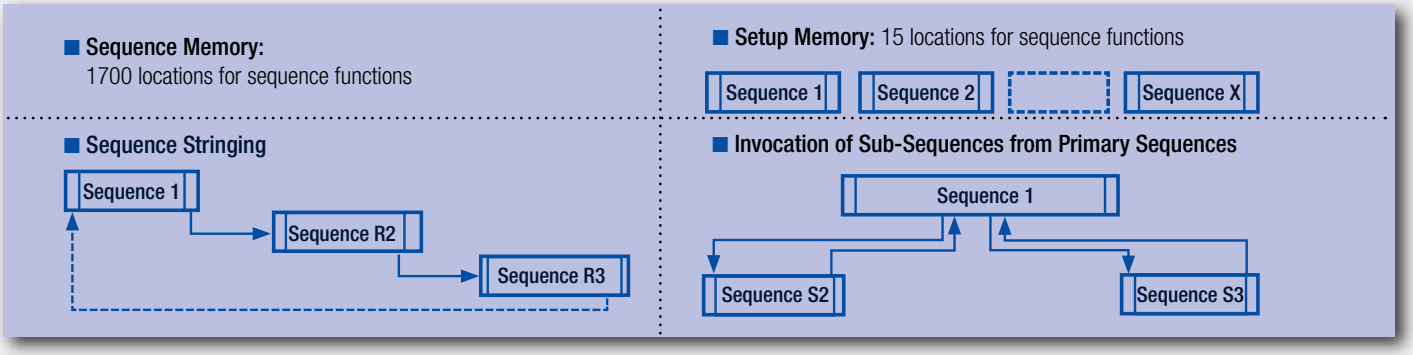
- Benchtop instrument
- CD-ROM with user and driver software, operating instructions (D + EN), data sheet (D + EN)
- Clear-cut user software [soft front-panel]
- Mains cable (P500, P800, P1500)
- USB cable (90° angle)
- Installation set for 19" rack mounting
- DAkkS calibration certificate

OPTIONAL ACCESSORIES:

- IEEE 488 interface **(K384A)**
- 3-phase mains power cable for SYSKON P3000 and P4500 **(K991B)**



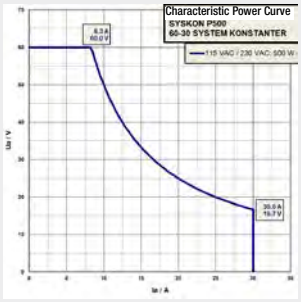
For software refer to Page 06 - 13

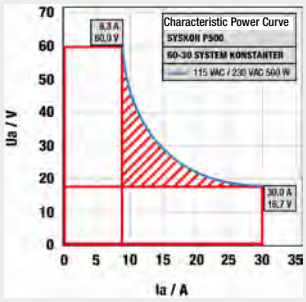


SYSKON P500

500 W Output Power





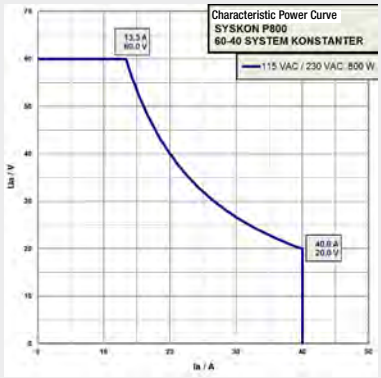


Auto-range curve as compared with square-wave curves

SYSKON P800

800 W Output Power

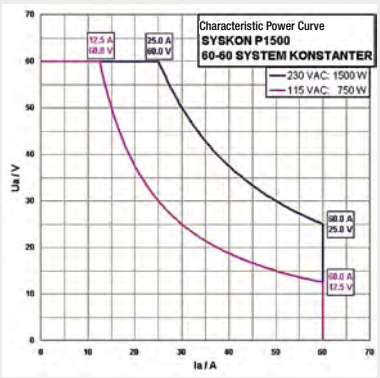




SYSKON P1500

1500 W Output Power

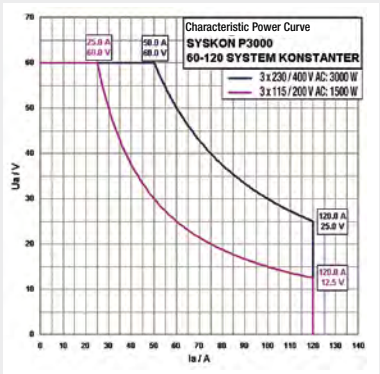




SYSKON P3000

3000 W Output Power

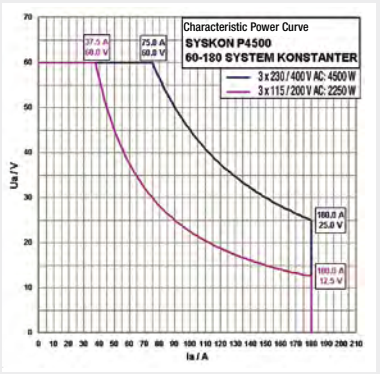




SYSKON P4500

4500 W Output Power





For software refer to Page 06 - 13

Type	Article
SYSKON P500	K346A
SYSKON P800	K347A
SYSKON P1500	K353A
SYSKON P3000	K363A
SYSKON P4500	K364A
IEEE 488 port	K384A

TECHNICAL DATA

Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)
	P_{nom}	U_{Set}	I_{Set}	Benchtop Instrument	19" Rack	
	[W]	[V]	[A]			
SYSKON P500	500	0 ... 60	0 ... 30	447 x 102 x 541	2 HU x 501	10
SYSKON P800	800	0 ... 60	0 ... 40	447 x 102 x 541	2 HU x 501	10
SYSKON P1500	1500	0 ... 60	0 ... 60	447 x 102 x 541	2 HU x 501	10
SYSKON P3000	3000	0 ... 60	0 ... 120	447 x 191 x 541	4 HU x 501	16
SYSKON P4500	4500	0 ... 60	0 ... 180	447 x 191 x 541	4 HU x 501	20

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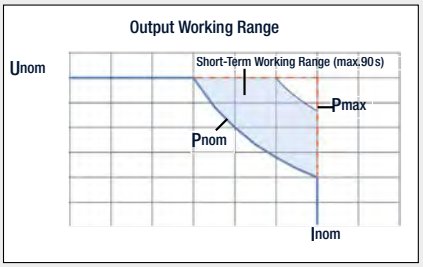
SSP / SLP 32N 120 ... 320 Single-Channel, Programmable Laboratory Power Supplies



SSP32N





SSP 32N Models, 120 / 240 W



SSP 32N Models, 320 W



SLP32N

SSP 32N KONSTANTERs 120, 240 and 320 (single output system power supplies) are single-channel programmable laboratory power supplies for universal use in R&D, production and testing.

BET circuit technology (bidirectional energy transformation) allows for rise and decay times of less than 1 ms almost entirely independent of load (< 4 ms with 80 V device).

FEATURES:

Analog interfaces: trigger input, signal outputs, control voltage inputs (5 V) for voltage and current, monitor voltage outputs (10 V) for voltage and current, sense terminals for auto-sensing operation at the power consumer

Display: 2 x 4-place LED display

Power output: auto-ranging + increased output power for brief intermittent periods

Sink: dynamic up to 15 W

Memory: 242 memory locations for sequences, 10 memory locations for basic settings (SSP 32N)

Digital interfaces: RS 232, GPIB (optional for SSP 32N)

SLP 32N KONSTANTERs are equipped with the same nominal output values and outstanding control characteristics as the SSP 32N series.

However, in this case the output parameters are set in the traditional manner with a ten-turn potentiometer.

But an analog interface for remote control and coupling purposes is provided here as well (also included with series SSP 32N devices).

FUNCTIONALITY:

- Output power: 120 W, 240 W and 320 W
- Very short response times [as of 1 ms]
- High setting resolution [as of 5 mV, as of 1 mA]
- High setting accuracy [as of 0.15% + 30 mV]
- High measuring accuracy [as of 0.05% + 20 mV]
- Master-slave connection
- Extensive protective functions [overvoltage, current regulation, overtemperature, limit]
- Sensing terminals for auto-sensing operation at the power consumer
- Flexible programmability – large memory module, import/export of stored sequences – (SSP 32N)
- Min-Max values display (SSP 32N)

CORE APPLICATIONS:

- Testing of electrical and electronic components
- Execution of electrical test pulses, e.g. for automotive applications)
- Execution of long-term testing
- Incorporation into test systems

SCOPE OF DELIVERY:

- Benchtop instrument
- Mains power cable with earthing contact plug
- Operating instructions

OPTIONAL ACCESSORIES:

- IEEE 488 interface (SSP32N) **(K380A)**
- Installation sets for 19" rack mounting **(K990A), (K990B)**
- Mains power cable for connecting two 32N devices **(K991A)**
- Factory calibration certificate

For software refer to Page 06 - 13

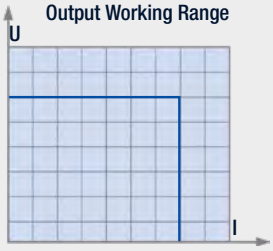
Type		Article	Power		Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)
			P_{nom}	P_{max}	U_{nom}	I_{nom}	Benchtop Instrument	19" Rack	
			[W]	[W]	[V]	[A]			
SLP 120 W SSP 120 W	32 N 20 RU 10 P	***K220A* / K320A**	120	200	0 ... 20	0 ... 10	221.5 x 102.0 x 397.5	½ 19" x 2 HU x 400	2.9
	32 N 40 RU 6 P	***K221A* / K321A**	120	240	0 ... 40	0 ... 6			
	32 N 80 RU 3 P	***K222A* / K322A**	120	240	0 ... 80	0 ... 3			
SLP 240 W SSP 240 W	32 N 20 RU 20 P	***K230A* / K330A**	240	320	0 ... 20	0 ... 20	221.5 x 102.0 x 397.5	½ 19" x 2 HU x 400	2.9
	32 N 40 RU 12 P	***K231A* / K331A**	240	360	0 ... 40	0 ... 12			
	32 N 80 RU 6 P	***K232A* /K332A**	240	360	0 ... 80	0 ... 6			
SLP 320 W SSP 320 W	32 N 32 RU 18 P	***K234A* / K334A**	320	430	0 ... 32	0 ... 18	221.5 x 102.0 x 397.5	½ 19" x 2 HU x 400	3.4
IEEE 488 interface for SSP 32N		K380A	–				–	–	0.1

Accessories on Page 05 - 10

LABKON P SERIES

Single-Channel, Computer Controlled Laboratory Power Supplies





LABKON P series devices (LABoratory KONstanter) offer convenient controls, a rugged design with minimal noise emission and high levels of accuracy.

The devices provide an ideal, reliable solution for many applications at the industrial level and for laboratory use.

FEATURES:

- CV and CC operating modes, automatic switching
- Several groups of parameters (device settings) can be saved and retrieved.
- Floating power output / no grounding
- Output can be switched on and off
- Supports SCPI (standard commands for programmable instruments)
- Protective functions, amongst others overvoltage protection
- Auto-sensing mode
- Benchtop instrument, also suitable for mounting to a 19" rack
- RS 232 port, optional GPIB and USB
- Calibration (adjustment) function

SCOPE OF DELIVERY:

- Benchtop instrument
- Rubber protector
- Mains cable (earthing contact)
- Safety precautions
- Operating instructions (German and English) on CD-ROM

OPTIONAL ACCESSORIES:

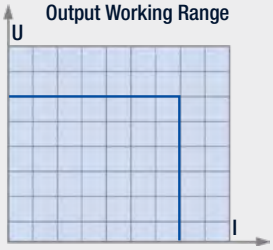
- IEEE 488 interface **(K890A)**
- USB port **(K891A)**
- 19" installation set **(Z990A)**
- Factory calibration certificate

Type		Article	Power P_{nom} [W]	Voltage U_{Set} [V]	Current I_{Set} [A]	Dimensions (W x H x D in mm) Benchtop Instrument	Weight (approx. in kg)
500 W	LABKON P500 20/25	**K147A**	500	0 ... 20	0 ... 25	226 x 110 x 414 with rubber protector	5.5
	LABKON P500 35/14.5	**K148A**	500	0 ... 35	0 ... 14.5		
	LABKON P500 80/6.5	**K149A**	500	0 ... 80	0 ... 6.5		
	LABKON P500 120/4.2	**K150A**	500	0 ... 120	0 ... 4.2		
800 W	LABKON P800 20/40	**K157A**	800	0 ... 20	0 ... 40	213 x 104 x 391 without rubber protector	
	LABKON P800 35/22.5	**K158A**	800	0 ... 35	0 ... 22.5		
	LABKON P800 80/10	**K159A**	800	0 ... 80	0 ... 10		
	LABKON P800 120/6.5	**K160A**	800	0 ... 120	0 ... 6.5		

LSP 32K KONSTANTER

Single-Channel, Computer Controlled Laboratory Power Supplies





Series LSP 32K KONSTANTERs (laboratory and system power supply) are linear controlled power supplies for use in R&D, production, service and training applications.

The devices are distinguished by outstanding ease of operation, excellent regulating accuracy and minimal residual ripple.

FEATURES:

- Process controlled
- Serial device interface
- Output can be switched on and off
- Voltage and current regulating
- Rotary encoder for adjusting U_{SET} and I_{SET}
- Adjustment is also possible with keys
- Multifunctional LCD panel
- Setup memory for 10 device settings
- Protective functions
- Benchtop instrument, suitable for mounting to a 19" rack

SCOPE OF DELIVERY:

- Benchtop instrument
- Mains power cable with earthing contact plug
- Operating instructions on CD-ROM

OPTIONAL ACCESSORIES:

- Interface adapter for USB **(K910B)**
- Interface adapter for RS 232 **(K910A)**
- Factory calibration certificate

For software refer to Page 06 - 13

Type		Article	Power P_{nom} [W]	Voltage U_{Set} [V]	Current I_{Set} [A]	Dimensions (W x H x D in mm) Benchtop Instrument	Dimensions (W x H x D in mm) 19" Rack	Weight (approx. in kg)
LSP 32K	32 K 18 R 5	**K110A**	90	0 ... 18	0 ... 5	215 x 100 x 280	½19" x 2 HU x 243 + 45 mm	6.0
	32 K 36 R 3	**K111A**	108	0 ... 36	0 ... 3			
	32 K 72 R 1.5	**K112A**	108	0 ... 72	0 ... 1.5			

Accessories on Page 05 - 10

Overview

Technical Specifications

Type	Article	Max. Power		Setting Range		Response Times (at nominal load)		Setting Resolution			Setting Accuracy		Settling Time for U with Sudden Load Variation 20% ... 100% I_{nom}	
		Dura-tion [W]	< 90 s [W]	U_{Set} [V]	I_{Set} [A]	0 V → U_{nom} (ms)	U_{nom} → 1 V (ms)	U_{Set} (mV)	I_{Set} (mA)	t_{Set} (ms)	U_{Set} ± (%+mV)	I_{Set} ± (%+mA)	Tolerance (mV)	Time (ms)
Programmable Laboratory Power Supplies														
SYSKON P500-60-30	K346A	500	–	0 ... 60	0 ... 30	2	20	1	1	1	0.05+30	0.05+ 90	120	0.6
SYSKON P800-60-40	K347A	800	–	0 ... 60	0 ... 40	2	15	1	1	1	0.05+30	0.05+ 90	120	0.5
SYSKON P1500-60-60	K353A	1500	–	0 ... 60	0 ... 60	2	11	1	1	1	0.05+30	0.05+ 90	120	0.4
SYSKON P3000-60-120	K363A	3000	–	0 ... 60	0 ... 120	15	11	1	1	1	0.07+48	0.10+135	120	1.2
SYSKON P4500-60-180	K364A	4500	–	0 ... 60	0 ... 180	19	11	1	1	1	0.10+48	0.15+180	120	1.6
SSP 32 N 20 RU 10 P	K320A	120	(200)	0 ... 20	0 ... 10	1	1	5	2.5	10	0.15+30	0.4+35	40	0.2
SLP 32 N 20 R 10	K220A									–				
SSP 32 N 40 RU 6 P	K321A	120	(240)	0 ... 40	0 ... 6	1	1	10	2	10	0.15+40	0.5+20	80	0.2
SLP 32 N 40 R 6	K221A									–				
SSP 32 N 80 RU 3 P	K322A	120	(240)	0 ... 80	0 ... 3	4	4	20	1	10	0.15+80	0.5+10	160	0.2
SLP 32 N 80 R 3	K222A									–				
SSP 32 N 20 RU 20 P	K330A	240	(320)	0 ... 20	0 ... 20	1	1	5	5	10	0.15+40	0.5+70	40	0.6
SLP 32 N 20 R 20	K230A									–				
SSP 32 N 40 RU 12 P	K331A	240	(360)	0 ... 40	0 ... 12	1	1	10	3.33	10	0.15+45	0.5+45	80	0.3
SLP 32 N 40 R 12	K231A									–				
SSP 32 N 80 RU 6 P	K332A	240	(360)	0 ... 80	0 ... 6	4	4	20	2	10	0.15+80	0.5+25	160	0.2
SLP 32 N 80 R 6	K232A									–				
SSP 32 N 32 RU 18 P	K334A	320	(430)	0 ... 32	0 ... 18	1	1	10	5	10	0.15+50	0.5+70	64	0.5
SLP 32 N 32 R 18	K234A									–				
LABKON P500 20/25	K147A	500	–	0 ... 20	0 ... 25	50	50	1	1	–	0.03+5	0.5+8	n.a.	n.a.
LABKON P500 35/14.5	K148A	500	–	0 ... 35	0 ... 14.5	50	50	1	1	–	0.15+5	0.5+6	n.a.	n.a.
LABKON P500 80/6.5	K149A	500	–	0 ... 80	0 ... 6.5	50	50	1	1	–	0.03+10	0.5+3	n.a.	n.a.
LABKON P500 120/4.2	K150A	500	–	0 ... 120	0 ... 4.2	60	60	As of 1	1	–	0.03+15	0.5+10	n.a.	n.a.
LABKON P800 20/40	K157A	800	–	0 ... 20	0 ... 40	50	50	1	1	–	0.03+5	0.5+15	n.a.	n.a.
LABKON P800 35/22.5	K158A	800	–	0 ... 35	0 ... 22.5	50	50	1	1	–	0.03+8	0.5+6	n.a.	n.a.
LABKON P800 80/10	K159A	800	–	0 ... 80	0 ... 10	50	50	1	1	–	0.03+10	0.5+5	n.a.	n.a.
LABKON P800 120/6.5	K160A	800	–	0 ... 120	0 ... 6.5	60	60	As of 1	1	–	0.03+15	0.5+12	n.a.	n.a.
LSP 32 K 18 R 5	K110A	90	–	0 ... 18	0 ... 5	200	1500	10	1	–	0.1+20	0.2+20	70	50
LSP 32 K 36 R 3	K111A	108	–	0 ... 36	0 ... 3	200	1500	10	1	–	0.1+20	0.2+20	70	50
LSP 32 K 72 R 1.5	K112A	108	–	0 ... 72	0 ... 1.5	200	3000	20	1	–	0.1+20	0.2+20	70	50

■ Standard equipment ◆ Optional

Overview

Technical Specifications

Residual Ripple		Interfaces				Programmable Sequences	Number of Basic Setting Memory Locations	Number of Sequence Memory Locations	Sink Mode	Overvoltage Protection	Overcurrent Protection	Auto-Ranging Output	Output On/Off	Front Panel Output	Rear Panel Output	Sense Terminals	SELV (safety extra-low voltage)
U (mV_{TRMS})	I [mA_{TRMS}]	Analog	RS 232	USB	IEEE 488												
6	50	■	■	■	◆	■	15	1700	Dyn.	■	■	■	■	–	■	■	–
6	50	■	■	■	◆	■	15	1700	Dyn.	■	■	■	■	–	■	■	–
6	50	■	■	■	◆	■	15	1700	Dyn.	■	■	■	■	–	■	■	–
10	70	■	■	■	◆	■	15	1700	Dyn.	■	■	■	■	–	■	■	–
15	100	■	■	■	◆	■	15	1700	Dyn.	■	■	■	■	–	■	■	–
10	25	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	■
			–		–	–	–	–		–	–						
10	20	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	■
			–		–	–	–	–									
10	10	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	–
			–		–	–	–	–		–	–						
15	50	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	■
			–		–	–	–	–		–	–						
15	25	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	■
			–		–	–	–	–		–	–						
15	20	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	–
			–		–	–	–	–		–	–						
30	50	■	■	–	◆	■	10	242	Dyn.	■	■	■	■	■	■	■	■
			–		–	–	–	–		–	–						
3	10	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	■
5	8	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	■
8	6	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	–
15	6	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	–
10	20	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	■
10	8	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	■
16	6	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	–
16	10	–	■	◆	◆	–	10	–	–	■	■	–	■	■	–	■	–
2	5	–	◆	◆	–	–	–	–	–	■	■	–	■	■	–	–	■
2	4	–	◆	◆	–	–	–	–	–	■	■	–	■	■	–	–	■
2	3	–	◆	◆	–	–	–	–	–	■	■	–	■	■	–	–	–

■ Standard equipment ◆ Optional

ACCESSORIES

Laboratory Power Supply



2x32N Installation Set



Mains Jumper Cable



Interface Adapter

Type	Article	Designation	Usable for
Installation set	**K990A**	Installation set 1x32N for KONSTANTER SSP/SLP 32N	SSP 32N, SLP 32N
Installation set	**K990B**	Installation set 2x32N for KONSTANTER SSP/SLP 32N	SSP 32N, SLP 32N
Installation set	**Z990A**	Installation set for SPL and LABKON P series	SPL series, LABKON P series
Mains jumper cable	**K991A**	Mains jumper cable, 0.4 m, for SLP32N and SSP32N	SSP 32 N
Mains cable	**K991B**	3-phase mains power cable, 3 m, for SSP64N and SYSKON	SSP 64N, SYSKON P3000/P4500
RS 232 adapter	**K910A**	Interface adapter, RS 232 / LSP, SSL	LSP 32K, SSL 32EL
USB adapter	**K910B**	Interface adapter, USB / LSP, SSL	LSP 32K, SSL 32EL
IEEE 488 port	**K890A**	Optional IEEE 488 interface for SPL and LABKON P series	SPL series, LABKON P series
USB port	**K891A**	Optional USB port for SPL and LABKON P series	SPL series, LABKON P series
RS 232 – USB converter	**Z501L**	Adapter cable for connecting instruments with an RS 232 port to the USB port at a PC	
RS 232 COM server	**ZPJ COM server**	For direct connection of serial interfaces such as RS 232 to a network	SYSKON, SSP, LABKON, LSP, SPL, SSL

OEM Power Supplies

Panel Mount Power Supplies



OEM power supplies for special applications, or in accordance with customer specifications.

In addition to our standard power supply ranges (laboratory KONSTANTERs), we also fabricate power supplies for special applications, or in accordance with customer specifications, for example:

- Fixed voltage switched-mode power supplies as European plug-in module or in cartridge format
- 24 to 12 V DC-DC converters for commercial vehicles
- Customer-specific power supplies

The photos show examples of our OEM power supplies.

SOFTWARE 06

Transmission, display, management, documentation and visualization of complex structures – our software does it all.

Standards and regulations apply to all electrical systems and equipment.

Time required for well-organized safety tests is minimized through the use of ultramodern test software – now with cloud connectivity as well.

GOSSEN METRAWATT can provide you with a complete spectrum of software:

From a free report generating program right on up to IZYTRONIQ – the new dimension of measuring technology for testing systems, machines, equipment and medical devices, with which commercial, infrastructural and technical management of properties, buildings and systems is made possible.

All of our instruments with the IQ label are compatible with IZYTRONIQ and the GOSSEN METRAWATT CLOUD.

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GOSSEN METRAWATT.CLOUD

Cloud computing is probably the most important technological development in recent years. The world's going digital, and data is no longer stored locally but rather in the cloud. But which benefits does cloud computing offer for measuring and test applications?

Getting started with the modern world of cloud computing is easy. The GOSSEN METRAWATT CLOUD can provide you with a platform solution for working more efficiently, easier and more securely. The required IT infrastructure is made available by means of a computer network with various applications. Instead of high initial investment costs and complex setup of the required server landscapes, services are made available immediately as a package in return for a monthly fee.

As a user, you can conveniently book services online at any time of day, 365 days a year, or add further users and functions via the GOSSEN METRAWATT CLOUD portal.

Security is a very important issue for us. This is why special attention was already focused on data protection and data security during the conceptualization and implementation phases.

The GMC-INSTRUMENTS GROUP uses European server landscapes. All of our data is stored at data centers which maintain highest possible security standards. Where contract and payment processing is concerned, we work together with companies based in Germany and guarantee that we handle your data with utmost care and in accordance with German law.

All links between the individual services are of course SSL-encrypted and secured.



MORE SECURE

Security is fundamental. From data backups and encrypted communication, right on up to security updates – we offer comprehensive protection. Our cloud solution is hosted on European servers and of course complies with the General Data Protection Regulation (GDPR).

MORE FLEXIBLE

We supply the required IT infrastructure in combination with the necessary software components. Our cloud is at your disposal 365 days a year. If your cloud tasks or requirements grow, you can extend them yourself with only minimal lead-time.

MORE EFFECTIVE

Perfectly matched components have a lasting effect on your test process and furnish it with a well-organized structure. Efficiency is thus increased, and testing costs are reduced.

MORE INTELLIGENT

Measurement and test data from various instruments can be combined into a single test, documented and shared with your customers without any post-processing time.

IZYTRONIQ CLOUD COLLECTION

The **IZYTRONIQ CLOUD COLLECTION** provides you with perfectly matched components which ensure structurally organized execution of tests and their documentation in compliance with the standards. The establishment of orderly test structures is imperative due to legally stipulated employer responsibility.

The **IZYTRONIQ CLOUD COLLECTION** simplifies work in the test team and the creation of a legally secure test organization at especially attractive prices. And you can always access your data – regardless of your geographic location.

The package includes IZYTRONIQ, VIZIONIQ and ELEXONIQ.

Your Benefits

- Immediate availability
- Audit-proof data and report management in the cloud
- Simple test organization setup
- Time and cost savings
- Increased efficiency thanks to process optimized, flexible application
- Faster availability of test documentation

- ✓ **Easy testing**
- ✓ **Easy inventory taking**
- ✓ **Easy provision of data**
- ✓ **Anytime, anywhere**
- ✓ **For companies of all sizes**
- ✓ **At attractive prices**







IZYTRONIQ PREMIUM CLOUD – TESTING SOFTWARE

The cloud version of the testing software is installed locally on a notebook, a tablet or a computer. It offers all of the functionality provided by a IZYTRONIQ ENTERPRISE Premium license: quick and easy setup of complex structures and tests.

- ✓ **Work in teams without having your own server**
- ✓ **Multiple users, central data**
- ✓ **Easy to use, creative design**

ELEXONIQ INVENTORY – THE INVENTORY APP

Take inventory and synchronize various locations and objects directly in the cloud with ELEXONIQ Inventory. Available for Android, iOS and Windows – inventory can easily be taken online or offline using a smartphone, a tablet or a notebook.

- ✓ **Quick data acquisition thanks to optimized views**
- ✓ **Universal usability/flexibility**

VIZIONIQ DASHBOARD - THE CUSTOMER PORTAL

Provide your customers with insight into test data with the VIZIONIQ Dashboard! For example, test reports can be opened as PDF files in the portal via the browser. Beyond this, all data concerning objects can be viewed, including test results. Selection can be made as to who's permitted to see which data.

- ✓ **Provision of test reports and attachments for end customers**
- ✓ **Overview lists of devices under test**
- ✓ **Simple administration and independent expandability**

IZYCHECK IQ CLOUD SERVICES

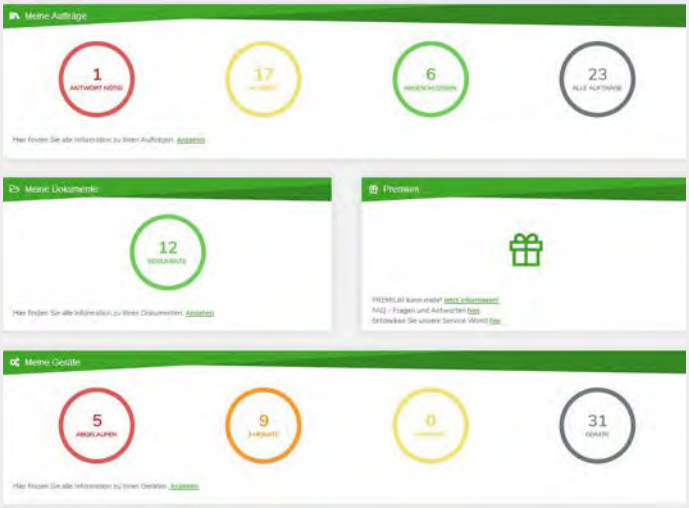
IZYCHECK SERVICES CLOUD

THE SELF-SERVICE PORTAL AT GMC-I SERVICE GMBH

IZYCHECK CLOUD SERVICES provide you with perfectly matched components which make it possible to set up professional test equipment management. The portal for after-sales services and products is platform-independent.

IZYCHECK CLOUD SERVICES simplify work in the test team and the creation of a legally secure test organization at especially attractive prices. And you can always access your data – regardless of your geographic location.

The package includes my Instruments, my Documents and my Orders.



Your Benefits

- Time and cost savings
- Increased efficiency thanks to process-optimized, flexible application
- Faster availability of test documentation
- Immediate availability
- Audit-proof data and report management in the cloud
- Simple setup for test equipment management

- ✓ **Platform-independent**
- ✓ **Legal security**
- ✓ **Data backup**
- ✓ **Archiving function**
- ✓ **Deadlines preview**
- ✓ **Attractive prices**



MY DOCUMENTS

This is where you archive your calibration certificates. You can search or sort by document type (e.g. DAkkS calibration certificate, factory calibration certificate, receiving calibration certificate, DGUV test verification or adjustment certificate), serial number, order number or instrument type.

- ✓ **24/7 document management**
- ✓ **Accessible from anywhere**
- ✓ **Easy to use, creative design**

MY INSTRUMENTS

This is where you manage your entire equipment fleet and access all important information concerning guarantee periods, the age of your instruments, the most recent as well as pending calibrations, your own inventory numbers, firmware versions etc.

- ✓ **Convenient filter options**
- ✓ **Quick and easy stock-taking**

MY ORDERS

In order to be able to plan your work sequences and deploy personnel as efficiently as possible, you can track your order with us in real time as it's entered and processed for calibration or repair, and find out when your measuring instrument will be returned to you. Track your order with us in real time at up to 10 stations.

- ✓ **Transparency from receiving through shipping**
- ✓ **e-mail notification concerning any and all changes**
- ✓ **Tracking number and direct link to the freight forwarder**

	Basic	Advanced	Professional	Premium
General Features	**≤ 3 devices**	**≤ 10 devices**	**≤ 100 devices**	**> 100 devices**
Test equipment management	■	■	■	■
Document management	■	■	■	■
Order management	■	■	■	■
Additional users can be added	–	■	■	■
Notification by e-mail when order status changes	■	■	■	■
Compatible with PC, smartphone, tablet etc.	■	■	■	■
Selectable dark mode	■	■	■	■
Settings for color blindness and achromatopsia	■	■	■	■
Overview of after-sales orders, calibration documents and measuring instruments	■	■	■	■
Overview of open price quotations	■	■	■	■
Overview of orders which are currently in process or have been closed	■	■	■	■
Overview of all types of documents (calibration certificates, DGUV tests, receiving reports etc.)	■	■	■	■
Overview of all measuring instruments	■	■	■	■
Overview of calibration intervals	■	■	■	■
Overview of pending calibrations	■	■	■	■
My Orders – Order Tracking, Order Status Detailed Order Display: Track Your Order in Real Time at Up To 10 Stations				
Confirmation of receipt	■	■	■	■
Receiving inspection	–	–	■	■
Quotation issued	■	■	■	■
Quotation approved	■	■	■	■
In repair	–	■	■	■
In adjustment / final testing	–	–	–	■
Adjustment / final testing completed	–	–	–	■
Calibration laboratory	–	–	■	■
Repair finished	–	■	■	■
Delivery ticket issued	■	■	■	■
Tracking number	■	■	■	■
My Documents – Document Management History and Archiving of All DAkkS Calibration Certificates, Factory Calibration Certificates, Receiving Calibration Certificates, DGUV Test Verifications and Adjustment Certificates				
Current and previous calibration certificates for your instruments as PDF files – 3, 10, 100 or > 100 depending on type of subscription	■	■	■	■
Total number of documents as overview	■	■	■	■
Display can be sorted and filtered by:				
Document type	■	■	■	■
Serial number	■	■	■	■
Order number	■	■	■	■
Device type	■	■	■	■
Certificate number	■	■	■	■
My Instruments – Test Equipment Management History and Overview of All Test Instruments				
Overview of all elapsed calibration intervals	■	■	■	■
Overview of calibrations which are due in 3 and 6 months	■	■	■	■
Overview of the number of instruments included in test equipment management	■	■	■	■
Display can be sorted and filtered by:				
Device type	■	■	■	■
Instrument image	■	■	■	■
Serial number	■	■	■	■
Inventory number	■	■	■	■
Last calibration	■	■	■	■
Next calibration	■	■	■	■
Calibration interval	■	■	■	■
Firmware version	■	■	■	■

IZYTRONIQ

A New Dimension of Test Technology



IZYTRONIQ is newly developed test software with which the entire testing scenario can be visualized, managed and documented in an audit-proof, instrument-independent fashion. And thus for the first time ever, you can combine and document measurement and test data from various test instruments and multimeters into a single test.

Intuitive operation and a modern look assure quick access to all functions. By intelligently selecting and hiding the various tools and workspaces, users are only offered options for action which are actually relevant for the respective task. Usability is supported by a creative design with expressive icons and the representation of complex database relationships in tree structures.

New IZYTRONIQ test software makes the entire testing sequence simpler and more flexible. Even complex tasks with numerous measuring points and different test sequences can be processed quickly, professionally and reliably. Sequences which are matched to the applicable standards can be programmed with individual test steps, in order to assure that all required measurements are conducted properly and recorded in the test report in a legally secure manner. As a result, the software supports electricians and test teams during initial and periodic testing of electrical systems, switchgear/controlgear assemblies and machines, as well as during safety and function tests for electrical and technical medical devices.



APPLICATIONS:

Testing of Equipment and Installations

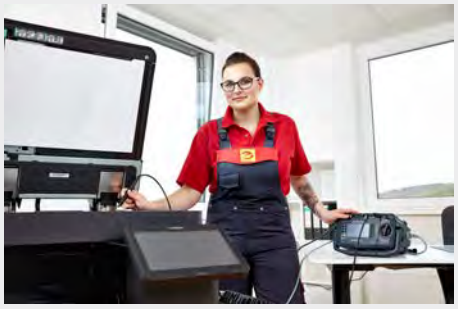
IZYTRONIQ permits the entry of electrical systems using a tree structure and component-oriented allocation of test results by means of push-print communication via Bluetooth/USB. Even complex tree structures for multiple measurements at various test points can be transferred to the test instrument bidirectionally.

Testing of Electrical Devices

Regardless of whether testing after repair, initial testing or periodic testing is involved – IZYTRONIQ places diverse options at your disposal for efficient, time-saving test procedures. As an alternative, individually created sequences can be transferred to the safety tester and executed there.





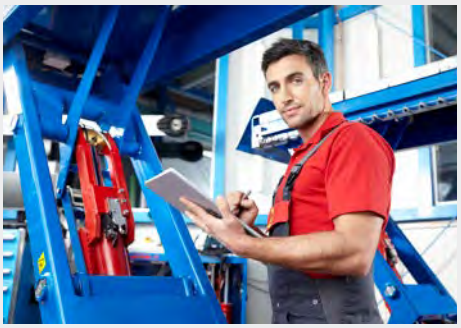


Testing of Machines

The complex structure of modern production machines necessitates a great variety of test steps, which are included in the overall measuring procedure. IZYTRONIQ does justice to this requirement through the use of individually programmable test sequences.

Testing of Technical Medical Devices

In order to assure that technical medical devices function safely and to their fullest extent, IZYTRONIQ supports you in fulfilling the relevant legal requirements quickly and simply, and permits especially efficient but nevertheless individual test documentation.





OVERVIEW

Perfectly Matched Software Packages for Your Requirements

IZYTRON .IQ

	Business				Education	
	Starter	Advanced	Professional	Premium	Professional	Premium
Basic Functions						
Tree structure for the visualization of the object structure	■	■	■	■	■	■
Tree structure for locations (properties, buildings, floors and rooms)	■	■	■	■	■	■
Test instrument and catalog management	■	■	■	■	■	■
Sequence and catalog editor	■	■	■	■	■	■
User administration	■	■	■	■	■	■
Active/inactive (remove instruments from service)	■	■	■	■	■	■
Extended Functions						
Document management – add attachments to instruments, delete reports	–	–	■	■	■	■
MULTI changes	–	–	■	■	■	■
Quick links	–	–	■	■	■	■
Analysis and trending for identical tests conducted on a given object	–	–	■	■	■	■
PDF printout with global statistics including failure rate as percentage	–	–	■	■	■	■
Window designer and data field editor for individualizing the application	–	–	–	■	–	■
Role and rights management for users	–	–	–	■	–	■
Export with attachments (IZY file)	–	–	–	■	–	■
Report Options						
Universal report as PDF file	■	■	■	■	■	■
PROFITEST distribution log	–	–	■	■	■	■
Printing Options						
List generator (PDF, Excel)	■	■	■	■	■	■
Barcode generator	–	■	■	■	■	■
PROFISCAN list generator	–	■	■	■	■	■
Documentation						
Report templates editable in Microsoft Word®	–	■	■	■	■	■
Company logo can be integrated into report	–	■	■	■	■	■
Scanned signature can be integrated into report	–	■	■	■	■	■
Images/photos can be integrated into test reports	–	–	■	■	■	■
Test Options						
Manual entry of measured values	■	■	■	■	■	■
Import and export of tree structures to and from measuring instruments [1]	■	■	■	■	■	■
Push-print [2]	■	■	■	■	■	■
Remote function [3]	–	–	■	■	■	■
Article Number	**S101V**	**S102V**	**S103V**	**S105V**	**S104V**	**S106V**

[1] For the following trees: portable SECUTEST, stationary PROFITEST
[2] For the following instruments: SECUTEST S4, PROFITEST IQ, METRAHIT IM XTRA, IM E-DRIVE
[3] SECUTEST S4 instruments

NEXONIQ

Data Converter for Migrating Older Data

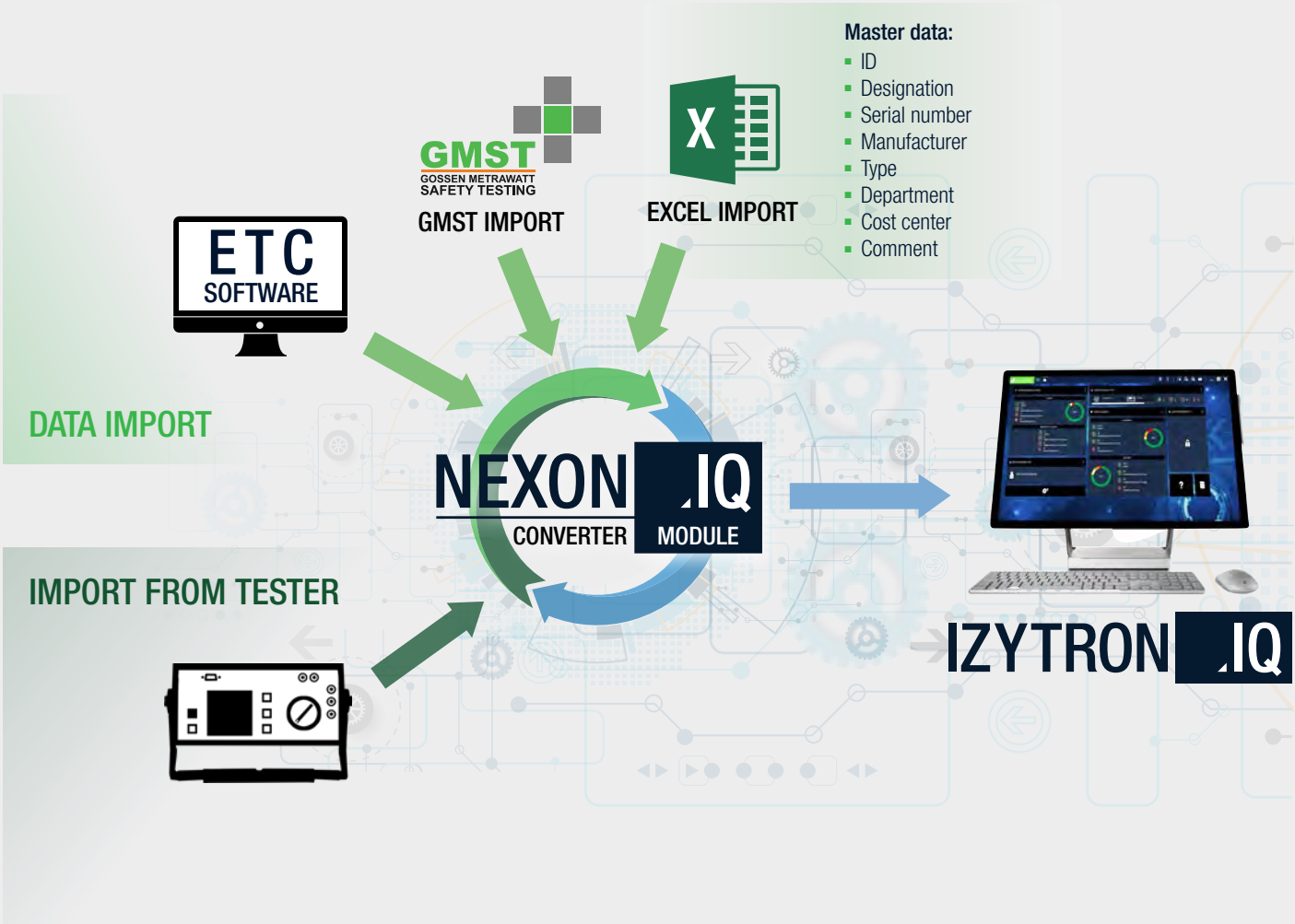


NEXONIQ is an optional module for IZYTRONIQ. NEXONIQ makes it possible to read data out of test instrument memory and simultaneously convert it to the IZYTRONIQ format. Existing ETC files can also be converted and transferred.

You receive a USB dongle as a key for connecting your test instruments.

Type	Article
NEXONIQ	Z957A

List of Connected Test Instruments		
SECUTEST SIII	SECUTEST SI Module	PROFITEST MPRO (firmware < 3.0)
SECUTEST SIII+	SECUTEST SI+ Module	PROFITEST MXTRA (firmware < 3.0)
SECUTEST SIII+H	PROFITEST MTECH	METRISO PRIME 10
SECUTEST S2N	PROFITEST MBASE	GEOHM XTRA
SECUTEST S2N+10	PROFITEST MBASE+ (firmware < 3.0)	GEOHM PRO
SECUTEST PSI Module	PROFITEST MTECH+ (firmware < 3.0)	PROFITEST PV SUN MEMO



PC DOC IQ

Report Generating Software



PC DOC IQ is a universal interface and data converter for IZYTRONIQ.

At the same time, PC DOC IQ can be used as test software in combination with Microsoft Office products. PC DOC IQ supports the generation of reports and lists with MS Word and MS Excel. Measurement and test data can also be saved to a database with the help of MS Access.



With the help of Microsoft Word, master data and test results can be entered into selectable Word templates directly from test instrument memory. Afterwards, the reports can be individually edited or printed in Microsoft Word.

PC DOC IQ also makes it especially easy to generate overview lists with Microsoft Excel.
The selected test objects are automatically entered to an Excel list to this end, and organized in a clear-cut fashion.

Microsoft Access transforms PC DOC IQ into a database solution. Master data and test results are transferred from the test instruments and saved to the Access database The data can be filtered, supplemented, maintained and analyzed with the help of Microsoft Access.

HIGHLIGHTS:

- Transfer of existing master data and test data to IZYTRONIQ by simply pressing a key
- An Excel interface for universal transfer of master data to IZYTRONIQ permits the transfer of master data from any source to IZYTRONIQ as a simple Excel table. Appropriate conversion tables are included in the scope of delivery.
- Interface to the Android app in the METRALINE PAT
- A data converter for various ETC file profiles permits import of master data from existing ETC files. Special processing is made use of in order to correct and supplement incompatible ETC files so that data can be transferred to IZYTRONIQ by simply pressing a key.

ADVANTAGES:

- Migrate PC DOC IQ database to IZYTRONIQ.
- Read out test instruments and transfer data to IZYTRONIQ.
- Convert ETC files to IZYTRONIQ format.
- Android app for device tests.

Type	Article
PC DOC IQ	Z958A
PC DOC IQ upgrade	Z959A

Information for upgrade customers concerning PC DOC IQ (Z959A):

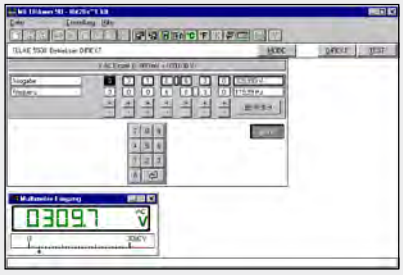
In addition to the software interface for IZYTRONIQ, PC DOC IQ also includes an update for PC.doc-Access and PC.doc-Word/Excel, which permits the use of the familiar scope of functions offered by Windows 10 and the new versions of Microsoft Office.

For training offerings see section “Training Center”, on Page 10 - 2.

PC DOC IQ makes it possible to read in data from the following test instruments:		
SECUTEST Base, Base 10, PRO (firmware through 1.8.3)	SECUTEST S2N+W	PROFITEST XTRA (≤ firmware 1.16)
SECUTEST PSI Module	SECUSTAR FM	PROFITEST PRO (≤ firmware 1.16)
SECUTEST SI Module	SECULIFE SB	PROFITEST TECH+ (< firmware 1.16)
SECUTEST SI+ Module	SECULIFE ST	PROFITEST Base+ (≤ firmware 1.16)
SECUTEST 0701-0702	SECULIFE IP	PROFITEST INTRO (≤ firmware 1.20)
SECUTEST 0701-0702 SII	METRATESTER 5F	PROFITEST 0100
SECUTEST SII+	MINITEST (all types)	PROFITEST C
SECUTEST SIII+	PROFITEST BASE	PROFITEST 204
SECUTEST S2N+ / S2N+10	PROFITEST TECH	

METRAwin 90-2

Calibration Software



Calibration software for controlling process calibrators

The handheld calibrator with multimeter is transformed into a professional, PC-based calibration system for measuring transducers, indicators, recording instruments etc. with the help of METRAwin 90-2 and an interface cable.
Calibration procedures are created with METRAwin software. Specified analog values are transmitted via the IR adapter from the PC to the calibrator and are fed to the device to be calibrated from the analog output at the calibrator.

The analog output value from the device to be calibrated is then measured by the multimeter, and is returned to the PC for evaluation via the interface. If the measurement results remain within the specified tolerances, each consecutive calibration step is initialized automatically until the entire procedure has been run.

Calibration data can be imported into other Windows applications (e.g. Word or Excel).

Type	Article
METRAwin 90-2	Z211A
Update 90-2	Z211E

MET/CAL® PROCEDURES

Calibration and Adjustment

Calibration institutes all over the world use predominantly Fluke multifunction calibrators in order to calibrate and adjust digital multimeters.

This can be automated to a great extent with corresponding procedures for Fluke's MET/CAL® calibration management software.

MET/CAL® procedures for Fluke's type 5520 A calibrator with MET/CAL version 7.2 for adjustment

MET/CAL® procedures for Fluke's type 5520 A calibrator with MET/CAL version 7.2 for calibration

Type	Article
METRAport 40S, adjust	Z234A
METRAHIT EBASE, adjust	Z234C
METRAHIT ESPECIAL, adjust	Z234G
METRAHIT ETECH, adjust	Z234E
METRAHIT EXTRA, adjust	Z234I
METRAport 40S, calibrate	Z234B
METRAHIT EBASE, calibrate	Z234D
METRAHIT ESPECIAL, calibrate	Z234H
METRAHIT ETECH, calibrate	Z234F
METRAHIT EXTRA, calibrate	Z234J

METRAwin 90-F /-FJ

Closed-Loop Calibration (F) and Adjustment System (FJ)





Closed-loop calibration system for METRAHIT multimeters with METRAwin 90-F/FJ, a PC with IEEE 488 interface and a Fluke 5500A, 5520A or 5700A calibrator

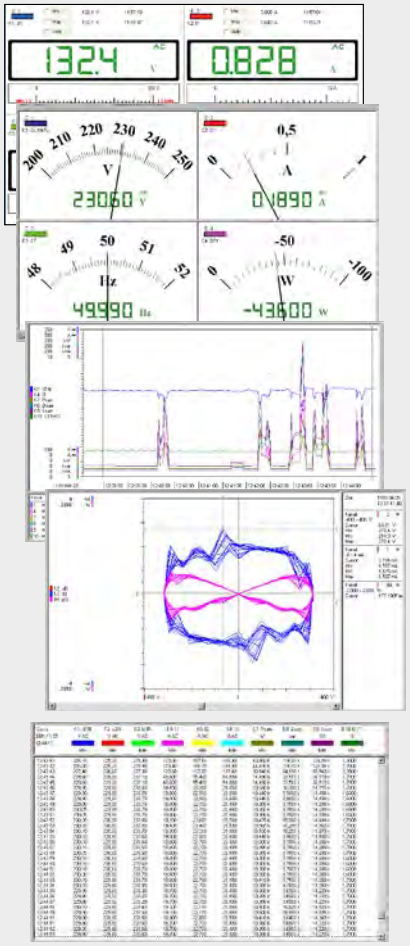
Calibration of analog and digital multimeters, recorders and power meters, power measuring transducers, amplifier modules, transducers etc.

- Automated calibration of METRAHIT multimeters with IR interface
- Generation, testing and documentation of calibration procedures with METRAwin 90-F
- Specified values from the PC via IEEE 488 to the calibrator ➪ analog signal to the device to be calibrated
- Measured values from the METRAHIT multimeter via IR-USB adapter to the PC automatically
- Measurement of analog measuring transducers with a multimeter including automatic transfer to the PC
- If the measured value is within tolerance, the calibration procedure advances automatically to its next step.
- Adjustment of the METRAHIT 22-29S / M via IR interface with METRAwin 90-FJ
- Calibration signal correction by means of keyboard entry or via the interface
- Printouts as standard calibration report, or as a user-specific certificate
- Dynamic data exchange with Microsoft Excel and Word
- Documentation with measuring uncertainty (DKD 3 / TUR) and data for certificates in accordance with EN ISO 9000

Type	Article
METRAwin 90-F	Z211C
METRAwin 90-FJ	Z211F

METRAWIN 10 / METRAHIT

Parameters Configuring and Analysis Software for METRAHIT Multimeters



METRAwin 10 / METRAHIT is a measurement data logging program for recording, visualizing, evaluating and documenting measured values from METRAHIT multimeters with reference to time.

METRAwin 10 / METRAHit supports the following multimeters (see complete list below):

- METRAHIT Starline series (X-TRA, E and S series) in combination with USB-X-TRA interface adapter, METRAHIT ULTRA BT, wireless via Bluetooth as well (up to 10 channels with max. 1 measurement per second)
- METRAHIT 30M in combination with USB-Hit (single-channel only, max. 10 measurements per sec.) or BD232 interface adapter (max. 4 channels)
- METRAHIT 22S-29S / 22M / 26M / I in combination with USB-Hit (single-channel only, max. 20 measurements per sec.) or BD232 interface adapter, or SI232-II or SI232 memory adapter (max. 6 channels, max. 20 measurements per sec.)
- METRAHIT 12S-18S / 16I / LIT / ONE Plus in combination with RS 232 interface adapter (single-channel only) or SI232-II or SI232 memory adapter (max. 6 channels, max. 20 measurements per sec.)

German, English, French, Spanish, Italian or Slovakian can be selected as the user interface language.

The software runs under Windows XP, 7, 8 and 10. The full version is purchased with site licensing.

A test version can be downloaded from our website.

Depending upon device type, one or several of the following operating modes are possible:

- Device configuration
- Online recording of measurement data
- Read-in and display of offline data recorded to device memory

Measurement data can be displayed and analyzed in various formats:

- **Analog/digital instrument (online)**, max. 4 channels, with limit monitor
- **Yt diagram**, max. 6 channels, scroll and zoom functions, absolute/relative time axis, automatic/manual Y scale, 2 cursors
- **XY diagram**, max. 4 channels, automatic/manual Y scale, 2 cursors
- **Data logger table**, max. 12 channels, data export to ASCII file or via the clipboard to other Windows programs e.g. MS Excel

Amongst other possibilities, a **continuous line recorder** printing option is available for documenting measurements. Up to 10 channels can be printed out continuously as a Yt line graph at a color printer with this function.

- **Arithmetic functions**
  Measurement data from different channels can be linked and processed with high performance arithmetic functions.

Type	Article
METRAwin 10 / METRAHit	GTZ3240000R0001

OVERVIEW

Software

Type	MULTIMETER METRAHIT																				ME-TRAport		Calibrator			
	EBASE	ETECH	X-TRA / EXTRA	SECULIFE HIT	ESPECIAL	OUTDOOR	T-COM / plus	ISO / ISO@Aero / COIL	ENERGY	ULTRA	2 plus	WORLD	ONE Plus	22S/M	23/24/25S	26S/M	29S	12-18 S/I/T/U	27M/I	27H+E CAR	32S/XS	40S	METRACAL MC	CAL	28C / 28C Light	18C
Software																										
METRAwin10/Hit	■	■	■	■	■	■	■	■	■	■	–	■	■	■	■	■	■	■	■	■	■	■	■	–	■	–
METRAwin 90-2	–	–	■	–	–	–	–	–	■	■	–	–	–	■	■	■	■	–	–	–	–	–	■	■	■	■
METRAwin 90 F	■	■	■	■	■	■	–	–	–	–	–	–	–	■	■	■	■	■	–	–	–	–	–	–	–	–
METRAwin 90 FJ	–	–	–	–	–	–	–	–	–	–	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–	–
LabVIEW drivers *	■	■	■	■	■	■	■	■	■	■	–	–	–	–	–	–	–	–	–	–	–	■	■	–	–	–

*A great variety of PC-aided control and test applications can be set up with the LabVIEW software package from National Instruments, the world's leading logging and analysis software for measurement data. The drivers permit the following functions with LabVIEW and VISA: read-out of momentary (live) measured values and units of measure, as well as measurement data files for supported DMMs and calibrators, and complete control of the METRACAL MC calibrator.

LabVIEW drivers are available as free downloads from the Internet.

OVERVIEW

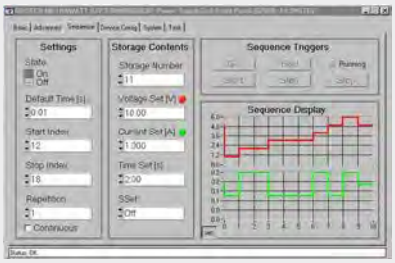
KONSTANTER Series Software

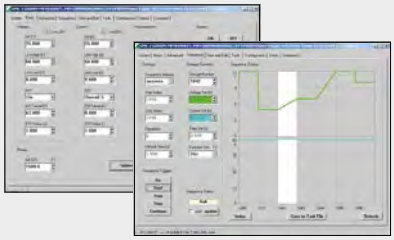
Software	SYSKON P	SSP 32 N	SSP 62 N/64 N	MSP 64D	LSP 32K	SSL 32EL	SPL
Device driver for NI LabVIEW	■	■	■	■	–	–	■
Device driver for NI LabWindows/CVI	■	■	■	■	–	–	–
Device driver for NI Agilent VEE	■	■	■	■	–	–	–
SYSKON Soft Front-Panel	■	–	–	–	–	–	–
SSP Soft Front-Panel	–	■	■	–	–	–	–
POWER Management System	–	–	–	–	■	–	–
ELOAD Management System	–	–	–	–	–	■	–

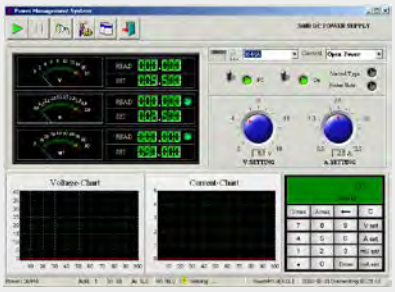
SOFTWARE

Device Drivers, Soft Front-Panel, Management System

Free Download









Device drivers for NI LabVIEW, NI LabWindows/CVI and Agilent VEE

Device drivers for simple integration of our programmable laboratory power supplies and electronic loads into automated measuring and test systems which are controlled by the specified software packages are available for download from our website free of charge.

SSP Soft Front-Panel – PC User Interface for SSP KONSTANTER

All SSP KONSTANTER functions can be controlled and displayed at a PC with this Windows software. Additional devices can be individually operated by starting the SFP more than once.

- For RS 232 and IEEE 488 (GPIB) interfaces
- Runs under Windows XP, Vista, 7 and 10
- Automatic search for SSP devices at all available interfaces
- Menu language: English

Prerequisite: NI-VISA driver and additional NI-488.2 driver (National Instruments) must be installed for control via GPIB.

SYSKON Soft Front-Panel – PC User Interface for SYSKON P Series

All SYSKON functions can be controlled and displayed at a PC with this Windows software. Several devices can be individually operated by starting the SFP more than once.

- For USB, RS 232 and IEEE 488 (GPIB) interfaces
- Runs under Windows XP, Vista, 7 and 10
- Automatic search for Syskon devices at all available interfaces
- Menu language: English

POWER Management System – PC User Interface for LSP-KONSTANTER 32K

Series 32K LSP Konstanter functions can be interactively controlled and displayed at a PC with this Windows software.

- For USB and RS 232 ports
- Runs under Windows XP, Vista, 7 and 10
- Menu language: English

Prerequisites: K910A or K910B interface adapter

ELOAD Management System – PC User Interface for SSL/SPL Electronic Loads

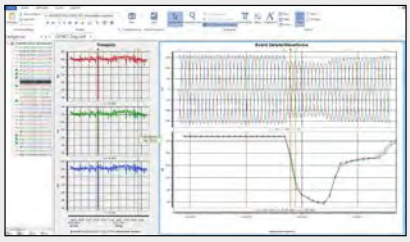
Series SSL/SPL electronic load functions can be interactively controlled and displayed at a PC with this Windows software.

- For USB IEEE488 (GPIB) and RS 232 ports
- Runs under Windows XP, Vista, 7 and 10
- Menu language: English

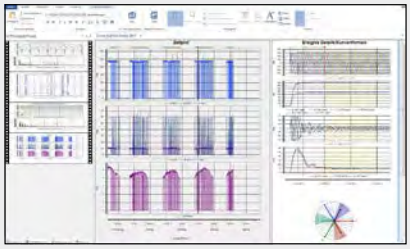
Prerequisites: K910A or K910B interface adapter

DRANVIEW 7 SOFTWARE

MAVOWATT 20 / 30 / 230 / 340 / 270



Fault Recording with Detail View



Measurement of Inrush Current

Thanks to simple handling and automatic report functions, DranView even makes it possible for normal users to quickly and easily view and analyze mains monitoring data.

DranView supports more than 12 languages and is being used successfully by thousands of customers all over the world. DranView is available in two different versions, namely Pro and Enterprise. Data collected by MAVOWATT 20, 30, 230, 240 and 270 mains disturbance and power analyzers can be evaluated and documented with this extremely versatile and convenient PC software.

Features:

- Intuitive, easy to handle user interface
- Rotatable axes in graphics, simple zooming and dragging of diagrams
- Time, waveform, amplitude duration and DFT diagrams
- Rescue kit (data repair)
- Automatic or user-specific report generator depending on measurement type
- Separate scaling of harmonics for voltage, current and power
- Data can be exported to ASCII, XLS and XLSX formats

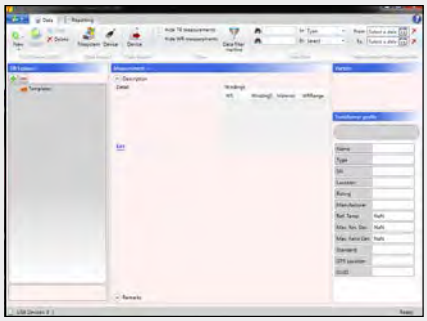
SCOPE OF DELIVERY:

- DranView Professional including USB hardware dongle
- DranView Enterprise including USB hardware dongle

Designation	Type	Article
DranView 6		
Software upgrade DVP-6 TO DVE-6 from DranView 6 Professional to DranView 6 Enterprise	**DVP-6 TO DVE-6**	**Z818J**
DranView 7		
DranView 7 Professional including USB hardware dongle for MAVOWATT 20	**DVP-7-MW20**	**Z828C**
DranView 7 Professional version including USB hardware dongle for MAVOWATT 20/30/40/70/230/240/270/270-400	**DV7 Professional**	**Z818Z**
DranView 7 Enterprise version including USB hardware dongle for MAVOWATT 20/30/40/70/230/240/270/270-400	**DV7 Enterprise**	**Z818X**
DranView 7 Upgrade		
Software upgrade from DranView 6 to DranView 7 (Professional or Enterprise)	**DV6 TO DV7**	**Z828A**
Software upgrade DVP-7 TO DVE-7 from DranView 7 Professional to DranView 7 Enterprise	**DVP-7 TO DVE-7**	**Z828B**
Software upgrade: DranView 7 Professional for MAVOWATT 20 to DranView7 Professional for MAVOWATT 20/30/40/70/230/240/270/270-400	**DVP-7-MW20 TO DVP-7**	**Z828D**

T-BASE PRO

Raytech Software



Free Download

T-Base Pro from Raytech is high-performance software for remote control, data transmission and analysis involving measuring instruments used for testing transformers.

The software runs under Windows operating systems. The graphic user interface is distinguished by intuitive operation. Missing functions can be easily added by means of a user-defined plug-in.

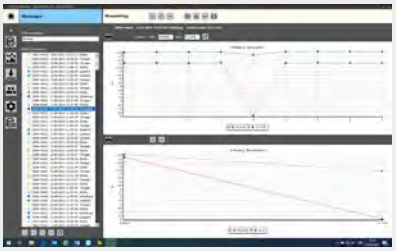
FEATURES:

- Easy import of all test results from your Raytech test system
- Display of measurement results in a clear-cut table
- Display of measurement results and/or creation of a test report with just a single click
- Graphic representation and simple interpretation of the test object's status
- Comparison of measurement results with history, search function with filter
- Creation of transformer profiles with download option
- Creation of transformers with several tapping switches is easy with the Tap Reference Wizard
- An integrated, high-performance diagnostics tool helps to monitor communications

OPTIONAL: T-BASE PRO Sequence, T-BASE PRO Remote

BT PRO MANAGER

Software for Metracell



“BT PRO Manager” PC software is an important tool when using the battery tester.

FEATURES:

- Create, maintain and manage the battery database (DUT management)
- Transfer and save measurement data
- View measurement results and create measurement evaluations (reports)

Free
Download

OTHER SOFTWARE

Suppliers of Compatible Software for the Test Instruments (examples)

Data from our test instruments are also supported by software packages from other suppliers.

Please address your enquiries directly to the respective suppliers.

Ambrosia (www.ambrosia-fm.de)
DDS (Data Design System) (www.dds-cad.de)
epINSTROM (www.instrom.de)
Hoppe (www.hoppe-consulting.de)
HSD (Händschke Datentechnik) (www.haendschke.de)
Loy & Hutz (www.loyhutz.de)
Mebedo (www.mebedo.de)
mj-consulting (www.mj-consulting.de)
Prüftech (www.prueftech.de)
Speedikon (www.speedikonfm.com)
Mebedo (www.mebedo.de)

MEDICAL MEASURING INSTRUMENTS 07

SECULIFE is the new, dependable brand name for top quality test instruments in the field of medical technology. They're distinguished by reliable measuring precision, outstanding quality and ease of use – because responsibility necessitates top performance, especially in the field of medicine.

The spectrum covered by the SECULIFE brand name includes test instruments for electrical safety, multi-patient simulators, photometry and interior light monitoring, test instruments for diagnostic and therapeutic ultrasound systems, as well as function testers for defibrillators, infusion pumps, respiration technology and HF electrosurgical generators. A broad spectrum of the test equipment required in the field of medicine is thus encompassed by this product line. The instruments are suitable for the performance of tests at medical institutions, as well as for use in the production of technical medical devices.

All SECULIFE instruments allow for precision measurements and documentation of results in accordance with binding international standards for medical devices.
Depending of the respective instrument, options are included for data storage, documentation and data communication.

TABLE OF CONTENTS

MEDICAL MEASURING INSTRUMENTS
07 - 2 Overview – Measuring and Test Instruments for Medical Technology

All products included in the SECULIFE product range can be found in our Medical Measuring and Test Technology catalog.

SAFETY TESTERS


SECULIFE ST BASE


SECULIFE ST PRO


SECULIFE HIT MD / AM

FUNCTION TESTERS

for defibrillators, infusion pumps and pressure measurement


SECULIFE DF BASE / PRO


SECULIFE IF PRO


SECULIFE DP BASE / PRO

FUNCTION TESTERS

for HF surgical generators, ultrasound systems (power) and ultrasound systems (TEE probes)


SECULIFE ES PRO


SECULIFE ES XTRA / ES PRIME


SECULIFE UP


SECULIFE UL

PATIENT SIMULATORS, NIBP SIMULATORS, SPO2 SIMULATORS


SECULIFE PS100


SECULIFE PS200


SECULIFE PS300


SECULIFE BP PRO


SECULIFE SP BASE


SECULIFE SP PRO

PHOTOMETRY



MAVOLUX B/C/BASE



MAVO-MONITOR


MAVO-SPOT


MAVOMAX 60/RK1

SOFTWARE


PERFECTLUM


IZYTRONIQ



IZYTRONIQ CLOUD COLLECTION

METRALINE

Cost and functionality were matched up ideally for the METRALINE series. Products included in the METRALINE series are distinguished by high levels of quality and reliability in combination with convincing value for the money.

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METRALINE

08 - 2 OVERVIEW – Measuring and Test Instruments with Optimized Scope of Functions

DEVICE TESTER FOR TESTING PER DIRECTIVE 2009/104/EC

The METRALINE PAT tester is a measuring instrument for checking the effectiveness of protective measures in electrical devices in accordance with DIN VDE 0701-0702 and Directive 2009/104/EC.



METRALINE PAT

MULTIMETER WITH TRMS MEASUREMENT

The new METRALINE DM41, 61 and 62 multimeters are distinguished by their convincing performance features. They measure current, voltage, resistance, frequency (DM41 and 62 only), capacitance (DM41 and 62 only) and temperature.



METRALINE DM 41



METRALINE DM 61



METRALINE DM 62

LOW-RESISTANCE AND PROTECTIVE CONDUCTOR OHMMETER

The METRALINE RLO CHECK is a low-resistance ohmmeter with digital display for quick and safe testing of large protective conductors, ground conductors and equipotential bonding conductors, as well as shielding and lightning protection systems.



METRALINE RLO CHECK



PE RLO-CHECK-PACKAGE

TEST INSTRUMENT FOR RCDS

The METRALINE RCD CHECK is an RCD test instrument for testing residual current devices, as well as for measuring line voltage and fault loop impedance.



METRALINE RCD CHECK

INSULATION RESISTANCE MEASURING INSTRUMENT

The instrument works with test voltages of 50 to 1000 V and was developed for the measurement of insulation resistance at voltage-free devices, systems and surge protection equipment.



METRALINE ISO CHECK

MEASURING INSTRUMENT FOR LOOP RESISTANCE

The METRALINE Z CHECK is suitable for testing fault loop impedance and line impedance with short-circuit current, for testing line voltage and for detecting phases.



METRALINE Z-CHECK

SINGLE/3-PHASE TEST ADAPTER FOR E-MOBILITY

Single and 3-phase test adapter with type 2 plug for testing the effectiveness of protective measures at electric charging stations with the PROFITEST MTECH+ / MXTRA and for simulating fictitiously connected electric vehicles and current-carrying capacity per IEC 61851-1



METRALINE PRO TYP EM I



METRALINE PRO TYP EM II



METRALINE PRO TYP EM III

ENERGY MANAGEMENT / CONTROL TECHNOLOGY

09

Only by being aware of their own energy consumption are users able to allocate and bill it, and to realize potential energy savings.

GOSSEN METRAWATT'S Energy Control System (ECS) serves as a professional basis for modern energy management systems in building management and industrial applications.
It provides the fundamentals for optimizing consumption and load, as well as for cost center billing.

GOSSEN METRAWATT offers all of the necessary components for setting up modern, energy data logging – from MID approved energy meters and summators right on up to Energy Management Control software (EMC) for logging, evaluation and billing.

Every company is different, and that's why our project engineering department provides you with support for planning, selection and start-up of your own individualized ECS solution.

Thanks to their special control algorithms, our control technology products are suitable for precision control tasks without overshooting, as well as for temperature limiting. They can be used in machinery and equipment manufacturing, as well as in the food processing and luxury food industries thanks to IP 67 protection at the front panel.

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ENERGY MANAGEMENT / CONTROL TECHNOLOGY

09 - 2 OVERVIEW – Energy Management and Control Technology

All of the respective products can be found in our Industry Technology catalog.

ENERGY MANAGEMENT

ENERGY METERS / POWER MEASURING SENSOR / MULTIFUNCTIONAL POWER METERS



ENERGYMID



ENERGYSENS



SINEAX AM Series

SUMMATORS



SMARTCONTROL



U1604 SUMMATOR

ENERGY MANAGEMENT SOFTWARE



EMC 5.x



SMARTCOLLECT

LOAD MANAGEMENT / LOAD OPTIMIZATION



U1500

CURRENT TRANSFORMERS



Split-Core Current Transformers



Bushing-Type Current Transformers



Wound-Primary Current Transformers

CONTROL TECHNOLOGY

COMPACT CONTROLLERS CONTROLLER MODULES SOFT CONTROLLERS



R2500 Controller and Temperature Limiter



R2700 Controller and Temperature Limiter



R6000 8-Channel Temperature Controller



PDPI SOFT Controller CoDeSys / PC Worx

SERVICES 10

As a competent partner with an extensive range of services, we're happy to provide you with active after-sales assistance so that we can offer you long-term investment and planning security.

Your learning success is at the center of attention. Our seminars make you fit for correct, professional use of our products. Practical experience, as well as technical and legal background information, round out our hands-on training program. You get background information concerning standards and regulations and are trained in the use of the hardware and software included in ultramodern measuring systems.

Seminars are held at our company headquarters in Nuremberg to this end. Further options include holding seminars at your location upon request.

Competent after-sales service is assured by our service company, namely GMC-I Service GmbH in Nuremberg, and encompasses calibration, repairs (including rental instrument service) and replacement parts service.

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SEMINARS

Your Knowledge is at the Center of Attention





Ongoing qualification enjoys top priority because complex measuring tasks, standards and regulations are subject to continuous change. Our instructors are experienced experts who are familiar with the requirements thanks to their own actual practice and always keep themselves up to date.

We can provide you with:

- Training at GMC-I's training center
- Training on-site at your location
- Individualized training concepts customized to meet your needs
- Webinars on selected topics

What distinguishes our training department?

- Instructors are employees of our company.
- We provide an adequate number of measuring instruments and notebooks during the seminar.
- We work in small groups.
- We show participants how hardware and software interact.
- Practice stations with corresponding instructional materials are available at the training facilities.
- The hotel is directly opposite our training facilities, and we book accommodation at a reduced price for participants.
- Free parking in the parking garage next door
- Participants can bring instruments with them for calibration or repair.

In addition to top quality, modern measuring and test technology, efficient implementation of legal requirements also necessitates the right know-how. A well trained and accordingly qualified inspector is distinguished by both.

Call the **seminar hotline** for our seminar catalog, prices, advice, and registration: +49-911-8602-935.

Online Registration

Web: www.gossenmetrawatt.com/training

Dates and Registration

e-mail: training@gossenmetrawatt.com



Seminars

Your Knowledge is at the Center of Attention

Course No.	Seminar Title	Utilized Instruments	Days
Testing Electrical Systems and Operating Equipment			
GTT 1211	Periodic testing of electrical equipment in accordance with requirements stipulated in DIN VDE 0701-0702 and DGUV regulation 3/TRBS	SECUTEST S2N+ SECUTEST SIII	2
GTT 1311	Periodic testing of electrical equipment in accordance with requirements stipulated in DIN VDE 0701-0702 and DGUV regulation 3/TRBS	SECUTEST BASE / BASE 10	2
GTT 1411	Periodic testing of electrical equipment in accordance with requirements stipulated in DIN VDE 0701-0702 and DGUV regulation 3/TRBS	SECUTEST PRO	2
GTT 1220	Measurements for testing the effectiveness of safety measures in low-voltage systems per DIN VDE 0100/0105 and DGUV regulation 3/TRBS	PROFITEST MBASE / MTECH	2
GTT 1230	Measurements for testing the effectiveness of safety measures in low-voltage systems per DIN VDE 0100/0105 and DGUV regulation 3/TRBS, and earth resistance measurements	PROFITEST MPRO / MXTRA	3
GTT 1240	Measurement for testing the effectiveness of safety measures in low-voltage systems per DIN VDE 0100/0105 and DGUV regulation 3/TRBS, and earth resistance measurements	PROFITEST INTRO	2
GTT 1235	Measurements for testing electrical power generators per DIN VDE 0100/0105 and DGUV regulation 3/TRBS, and earth resistance measurements	PROFITEST MPRO / MXTRA, PROFITEST PRIME (AC)	2
GTT 1236	Measurements for testing the effectiveness of safety measures in charging stations and charging cables per DIN VDE 0100/0105 and DGUV regulation 3/TRBS	PROFITEST MTECH+ / MPRO / MXTRA, PRIME (AC)	2
GTT 1520	Measurement for testing the effectiveness of safety measures in low-voltage systems per DIN VDE 0100/0105 and DGUV regulation 3/TRBS	PROFITEST PRIME PRIME (AC)	2
GTT 1515	Measurements for testing electrical equipment at machinery per DIN VDE 0113 (EN 60204)	PROFITEST PRIME PRIME (AC)	2
GTT 1215	Measurements for testing electrical equipment at machinery per DIN VDE 0113 (EN 60204)	PROFITEST 204 PROFITEST MPRO / MXTRA	2
Testing Electrical Systems and Operating Equipment (combination seminars: courses with testers and software together)			
GTT 6000	3-day combination seminar for SECUTEST S2N+ with IZYTRONIQ (Advanced and Professional versions) for portable devices	SECUTEST S2N+	3
GTT 6100	3-day combination seminar for SECUTEST BASE / BASE 10 with IZYTRONIQ (Advanced and Professional versions) for portable devices	SECUTEST BASE / BASE 10	3
GTT 6200	3-day combination seminar for SECUTEST PRO with IZYTRONIQ (Advanced and Professional versions) for portable devices	SECUTEST PRO	3
GTT 6500	3-day combination seminar for PROFITEST MBASE / MTECH with IZYTRONIQ (Advanced and Professional versions) in electrical systems, and earth resistance measurements	PROFITEST MBASE / MTECH	3
GTT 6600	4-day combination seminar for PROFITEST MPRO / MXTRA with IZYTRONIQ (Advanced and Professional versions) for portable devices	PROFITEST MPRO / MXTRA	4
GTT 7000	3-day combination seminar for SECUTEST S2N+ with PS3 user software (current version) for portable devices	SECUTEST S2N+ SECUTEST SIII	3
GTT 7200	3-day combination seminar for SECUTEST PRO with PS3 user software (current version) for portable devices	SECUTEST PRO	3
GTT 7500	3-day combination seminar for PROFITEST MBASE / MTECH with PS3 user software (current version) in electrical systems	PROFITEST MBASE / MTECH	3
GTT 8000	3-day combination seminar for SECUTEST S2N+ with ELEKTROmanager (current version) for portable devices	SECUTEST S2N+ SECUTEST SIII	3
GTT 8200	3-day combination seminar for SECUTEST PRO with ELEKTROmanager (current version) for portable devices	SECUTEST PRO	3
GTT 8500	3-day combination seminar for PROFITEST MBASE / MTECH with ELEKTROmanager (current version) in electrical systems	PROFITEST MBASE / MTECH	3
GTT 8600	4-day combination seminar for PROFITEST MPRO / MXTRA with ELEKTROmanager (current version) in electrical systems, and earth resistance measurements	PROFITEST MPRO / MXTRA	4
GTT 3010	Efficient testing for building management in accordance with DGUV regulation 3/TRBS, BetrSichV (German ordinance on industrial safety and health) and DIN VDE regulations with the SECUSTAR FM+ and PS3	SECUSTAR FM+	3

Seminars

Your Knowledge is at the Center of Attention

Course No.	Seminar Title	Utilized Instruments	Days
Medical Technology			
GTT 1213	Electrical safety tests for medical devices in accordance with DIN EN 62353, VDE 0751	SECUTEST S2N+ SECUTEST SIII SECULIFE ST	2
GTT 1413	Electrical safety tests for medical devices in accordance with DIN EN 62353, VDE 0751	SECUSTAR PRO	2
GTT 1414	Electrical safety tests for electrically operated hospital beds in accordance with DIN EN 62353, VDE 0751	SECUSTAR PRO	2
Testing of Arc Welding Equipment			
GTT 3012	Testing arc welding equipment in accordance with TRBS, BetrSichV (German ordinance on industrial safety and health) and DIN VDE 0544-4 with the SECUTEST PRO	SECUTEST PRO	1
GTT 3013	Testing arc welding equipment in accordance with TRBS, BetrSichV (German ordinance on industrial safety and health) and DIN VDE 0544-4 with the SECUTEST BASE/BASE 10	SECUTEST BASE/BASE 10	1
GTT 3014	Testing arc welding equipment in accordance with TRBS, BetrSichV (German ordinance on industrial safety and health) and DIN VDE 0544-4 with the SECUTEST S2N+W	SECUTEST S2N+W	1
Software for Administration, Following Up on Deadlines and Streamlining Test Sequences			
GTT 1224IQ	Basic seminar for IZYTRONIQ user software (Advanced and Professional versions)	SECUTEST PRO PROFITEST MXTRA PROFITEST PRIME	1
GTT 1224H	Basic seminar covering the current version of PS3 user software in combination with the SECUTEST	SECUTEST S2N+ SECUTEST SIII	1
GTT 1227A	Basic seminar covering the current version of ELEKTROmanager in combination with the SECUTEST	SECUTEST S2N+ SECUTEST SIII	1
GTT 1226	Basic seminar covering the current version of PC.doc-ACCESS user software	SECUTEST S2N+ SECUTEST SIII	1
Fundamentals of Power Disturbance Analysis			
GTT 1645	Introduction to the MAVOWATT 30/40/70 and Dranview software	MAVOWATT 30/40/70	2
GTT 1646	Introduction to the Mavowatt 230/240/270 and Dranview software	MAVOWATT 230/240/270	2

Additional Training Options: On-Site Seminars at our Customers' Facilities

Our customers don't waste time traveling long distances and, at the same time, avoid the costs associated with travel and overnight accommodation.
We'd be happy to provide you with a quotation for on-site training at your company.

SERVICE



As a leading provider of after-sales service for measuring and test instruments, GMC-I Service GmbH is certified in accordance with DIN EN ISO 9001:2015 and DIN EN ISO 14001.

Our DAkkS calibration laboratory is accredited per ISO / IEC 17025:2005.

We can offer you an optimized full service package including repairs, replacement parts service, service contracts, rental instrument service, testing per DGUV regulation 3 (BGV A3 tests) and calibration services, as well as value and quality conservation measures.

Beyond this, we continuously assure the safety and reliability of all operating equipment and the advancement of our customers' employees, thus increasing their economic efficiency.

Service Point



We're at your disposal:

Mo. to Thurs.	7:30 a.m. to 4:30 p.m.
Friday	7:30 a.m. to 2 p.m.

GMC-I Service GmbH
Beuthener Str. 41
90471 Nürnberg, Germany

Phone: +49 911 817718-0
Phone: +49 911 817718-253

service@gossenmetrawatt.com
www.gmci-service.com

Would you like to have your measuring instrument calibrated, does it require repairs or do you need a replacement part or a rental instrument? We cordially invite you to drop by personally.

We look forward to welcoming you!

IZYCHECK.IQ

The Self-Service Portal at GMC-I Service GmbH

IZYCHECK IQ SERVICES CLOUD

Calibration documents, test equipment management or live tracking of processing for orders you've placed with us – any time of day, quickly and simply regardless of your location. You don't need your own expensive, elaborate IT infrastructure.

The GOSSEN METRAWATT CLOUD is a browser-based cross-platform application that you can use on your PC, tablet or smartphone.

All respective data are stored on European servers. Thanks to single sign-on technology with one-time-only authentication, you can switch back and forth amongst all of the applications on the platform (e.g. IZYTRONIQ, VIZIONIQ, ELEXONIQ) unimpeded without having to log in repeatedly.

A Selection of Our Services

Calibration as an Element of Quality Assurance

After-Sales Service



Where calibration as a standard procedure is concerned, test equipment monitoring is included as an essential element of quality assurance in the DIN EN ISO 9000-9004 series of standards. Test equipment monitoring must assure that all test equipment with relevance for product quality measures “correctly”.

In order to ensure that this is the case, test equipment must be calibrated on a regular basis, and must be retraceable to national standards. Ascertained measured values must be documented as well. Traceability of calibration results to national standards had already been verified for the user in the past by means of “factory certificates” as a standard feature.

However, international recognition of certificates of this sort has become more and more questionable due to enormous growth in the number of calibration service providers, some of whom are unqualified. And thus to an ever greater extent, not only in other European countries do ISO 9000 inspectors demand calibration certificates issued by calibration service providers who are accredited by or associated with the EA (European Cooperation for Accreditation).

Our Services

- DAkkS calibration, factory calibration (ISO calibration)
- Calibration of medical devices (safety testers, function testers, patient simulators etc.)
- Recalibration of H-rail energy meters

ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-K-20313-01-00

The DAkkS accredited calibration laboratory operated by GMC-I Service GmbH is manufacturer-independent.

Repair Service

After-Sales Service



As a leading service provider for devices and systems for measuring, test, control and automation technology, we can provide you with extensive repair services.

Thanks to our highly qualified employees and monitored processes, we can assure quick and competent repair of your defective instrument.

Rental Instrument Service

After-Sales Service



Without fail, measuring instruments always break down at the most inconvenient moment, and the time required for a repair is always too long.

All of your test instruments are currently in use and a new order comes in, which must of course also be fulfilled.

Your test instrument is currently in the calibration lab but pending measurements need to be performed now.

We can offer you a rental instrument for a reasonable price under any of these circumstances.

Update Service

After-Sales Service



Our VDE test instruments are continuously updated to fulfill the latest standards and market requirements.

This assures that you'll still be in possession of an up-to-date, standards-compliant test instrument in the future.

Advantages of updating:

- Always up to date with the state-of-the-art
- Adaptation to the latest standards and regulations
- Access to new technological developments
- Avoidance of unnecessary new acquisitions
- Clear-cut, calculable costs

Replacement Parts Service

Always Well-Supplied



Where modern, high performance measuring and test instruments are utilized, the availability of replacement parts is an important criterion. With us you're always well-supplied. Original replacement parts are available for nearly all instruments in our well-stocked warehouse.

Worldwide Delivery Service

As a premium service provider for measuring and test instruments, we can of course provide you with replacement part delivery services. We ship original replacement parts to you – anywhere in the world, quickly and simply.

Further information concerning our comprehensive after-sales service is available at www.gmci-service.com.

APPENDIX 11

In order to provide orientation with regard to the most important regulations and ordinances in the field of measuring technology, frequently recurring terms and abbreviations are included below.

This is followed by an overview of the various measuring categories, currently valid safety regulations and product standards.

We then offer suggestions for recommended workshop equipment for electrical installation operations based on our measuring instruments in accordance with ZVEH and VDEW directives.

Finally, we provide you with a quick overview of our extensive range of measuring and test instruments with the help of a type index.

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The Fundamentals of Measuring and Test Technology

An Orientation Aid for the Regulations Jungle: BGV, DGUV, BetrSichV, TRBS and “Preservation of the Status Quo”

DGUV Regulation 3 (formerly BGV A3)

DGUV regulation 3 evolved from the merger of the two involved trade associations in 2015. DGUV regulation 3 is important with reference to the safety of electrical systems, machines and operating equipment. DGUV regulation 3, previously known as BGV A3, includes standards with which risks can be ruled out by means of testing in accordance with DGUV regulation 3. During testing, the inspector must comply with recognized rules of technology (e.g. VDE).

DGUV Regulation 4

DGUV regulation 4 evolved from GUV V3 as a result of the merger of the two involved trade associations. It applies to electrical systems and operating equipment, as well as community facilities, and is identical to GUV-V A3 (applications, inspectors, deadlines).

German Ordinance on Industrial Safety and Health (BetrSichV)



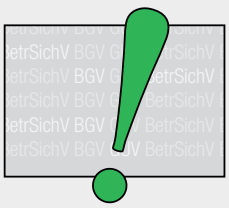
BetrSichV was issued by the German federal ministry of economics and has been in effect since the 1st of June, 2015. It’s directly related to German occupational safety legislation (ArbSchG). BetrSichV applies to the use of tools and working materials in all locations at which people work, i.e. companies **and** public facilities.
In the event that BetrSichV is violated, **criminal law** applies in extreme cases – a significant difference to DGUV! Test deadlines must be determined on the basis of a hazard assessment (§ 3).
Put briefly and to the point:
A minor hazard (e.g. a PC in an office) means a longer test interval, and a significant hazard (e.g. an angle grinder) means a shorter test interval. During testing, the inspector must comply with recognized rules of technology (e.g. VDE and TRBS 1201).

Technical Rules of the German Ordinance on Industrial Safety and Health (TRBS)



Technical rules of the German ordinance on industrial safety and health are formulated by a committee for work safety and published by the German federal ministry of labor and social affairs. For example, a TRBS reflects the state-of-the-art and the ergonomic findings associated with the provision and use of tools and working materials, as well as for the operation of systems which require monitoring.
The following TRBS are of special significance for us:
TRBS 1111: hazard assessment
TRBS 1201, part 1: inspection of tools and working materials
TRBS 1203, part 3: authorized person (prerequisites for an inspector)

Essential Differences Between BetrSichV and DGUV



- Obligatory documentation requirement
- Test deadlines must be determined by means of a hazard assessment.
- The operating company is responsible for commissioning a qualified inspector to conduct the test, and thus for the quality of the test as well.
- Violations of BetrSichV are not just misdemeanors, they may also be statutory offenses!
- Initial testing prior to start-up is mandatory under certain circumstances.

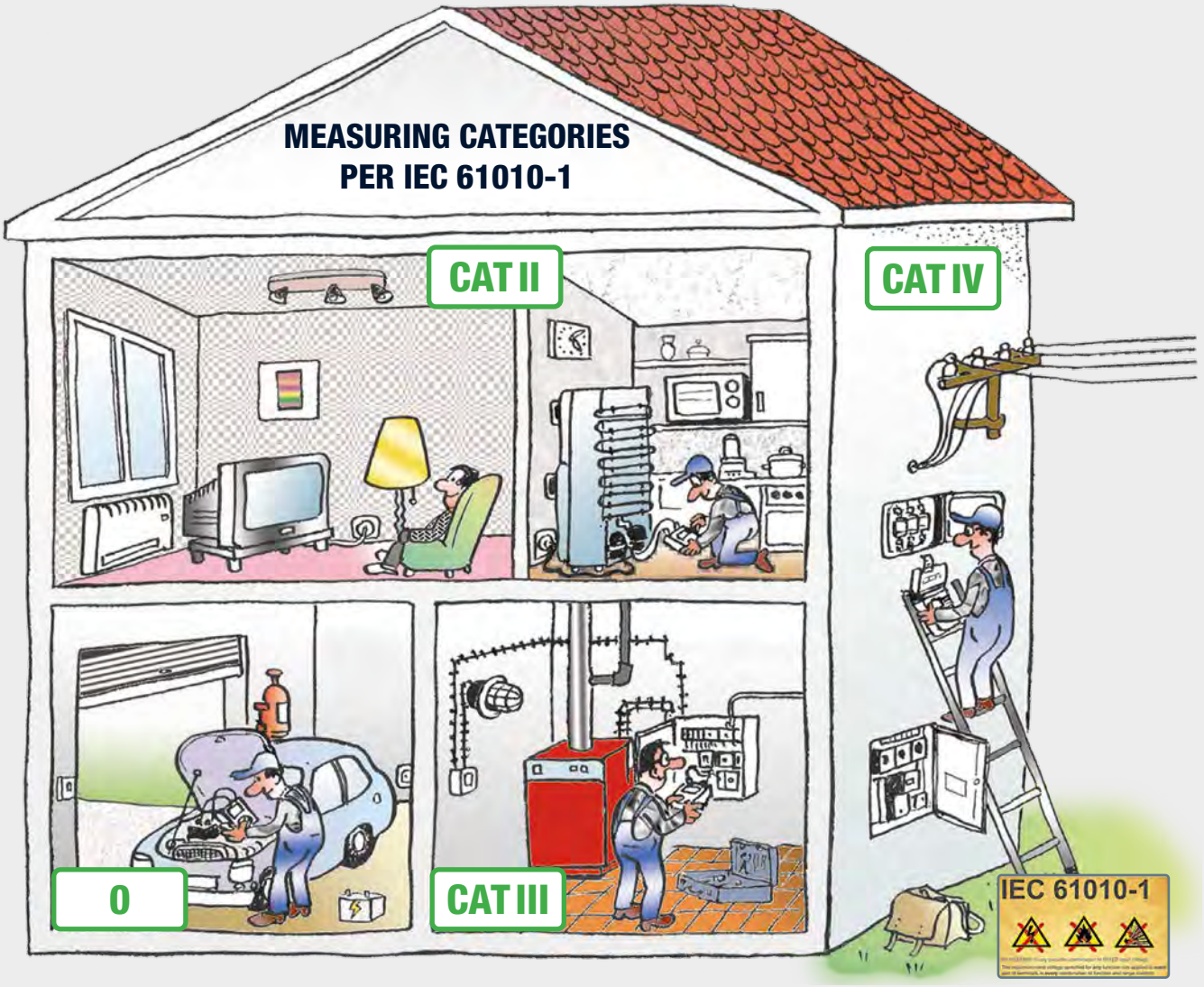
Preservation of the Status Quo for Electrical Systems



Retrofitting of electrical systems and operating equipment is not mandatory if:

- They complied with VDE regulations which were valid at the time they were set up or manufactured and still comply with them
- No adaptation to the current state-of-the-art is required by successor standards or other bodies of rules and regulations
- Operating and ambient conditions have not changed
- There are no defects which would represent a hazard for life and limb or any risk of property damage

For electricians, this means that the safety aspect must always be in the foreground when providing customers with consultation.



CAT	Description	Applications
0	Measuring equipment without connection to the mains which cannot be allocated to categories CAT II through CAT IV.	For example batteries etc.
CAT II	Measurements in electrical circuits which are directly connected to the low-voltage mains	Via plug, e.g. in household, office and laboratory applications
CAT III	Measurements in building installations	Stationary consumers, distributor terminals, devices connected permanently to the distributor
CAT IV	Measurements at power sources for low-voltage installations	Meters, mains terminals, primary overvoltage protection devices

With regard to multimeters and test instruments, the CE declaration of conformity confirms that European regulations (low-voltage directive and EMC directive) are adhered to.

The CE declaration is a prerequisite for putting products into circulation within the European Community. Adherence is substantiated by fulfilling the following standards: IEC 61010-1 (international), DIN EN 61010-1 (German version) and VDE classification VDE 0411-1, as well as product standards for devices used for testing, measuring or monitoring protective measures. IEC 61557, parts 1 through 16 (international), DIN EN 61557, parts 1 through 16 (German version) and DIN VDE 0413, parts 1 through 16.

Safety requirements for electrical equipment for measurement, control and laboratory use are described in this standard.

Currently valid safety regulations include:

- IEC 61010-1:2010 + Cor.:2011
- DIN EN 61010-1:2011-07
- VDE 0411-1:2011-07

Currently valid product standards include:

- IEC 61557-1 through 16:2014
- DIN EN 61557-1 through 16:2015
- VDE 0413-1 through 16:2016

Recommended Workshop Equipment **in Accordance with ZVEH and BDEW Guidelines**

Required Measuring and Test Instruments	Per Standard	For First-Time Users	Standard	For Efficient Work
Test bay with permanently integrated measuring instruments	DIN EN 50191	 METRATESTER 5+3P	 SECUTEST 21F	 METRATESTER 5+3P / VL2E
Test instruments for electrical equipment	DIN VDE 0701-0702	 METRATESTER 5+	 SECUTEST ST BASE	 SECUTEST ST PRO
Voltmeters to at least 600 V Current meters to at least 15 A continuity test	DIN EN 61010-1	 METRAHIT 2+ with WZ12C current clamp transformer	 METRAHIT AM TECH with WZ12C current clamp transformer	 METRAHIT AM TECH with Z3512A current clamp sensor
Current clamps to at least 300 A	—	 METRACLIP 410	 METRACLIP 410	 METRACLIP 86
Test instrument for insulation measurement, loop resistance, testing RCCBs/RCDs, R_{LO} measurement, earthing resistance	DIN EN 61557, part 2 DIN EN 61557, part 3 DIN EN 61557, part 4 DIN EN 61557, part 6 DIN EN 61557, part 7	 PROFITEST INTRO	 PROFITEST MTECH+ IQ	 PROFITEST MXTRA IQ
Earth testers	DIN EN 61557, part 5	—	 GEOHM C	 GEOHM C
Single-pole voltage testers, 2-pole voltage testers	DIN VDE 0680, part 5 DIN VDE 0682, part 401	 Duspol Digital 1000	 Duspol Digital 1000	 METRAVOLT 12D+L
Continuity testers	—	—	—	 ProfiSafe 690 B
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MEASURING AND TEST TECHNOLOGY

Measuring Systems for Medical Technology
- Function Testers
- Safety Testers

Measuring Technology – Universal
- Power Quality – Energy – Power
- Field Measuring Systems, Cable Detection Devices
- Ohmmeters / Clamp Meters
- Digital Multimeters
- Analog Multimeters
- Multimeter Accessories
- Calibrators
- Temperature Measuring Instruments

Testing Technology – Electrical
- Electrical Installations and Equipment Testing (permanently installed)
- Electrical Device Testing (portable)
- Testing of Electric Machines
- Earthing, Insulation, Low-Resistance
- Workshop Test Panels
- AS Interface Test Instruments

Power Supply Technology
- Laboratory Power Supplies
- Electronic Loads
- Customer-Specific OEM Power Supplies

Software for
- Measuring Instruments – Testers – Power Supplies

INDUSTRIAL MEASURING AND CONTROL TECHNOLOGY

Measuring Technology – Industrial
- Measuring Transducers for Temperature and DC Quantities
- Measuring Transducers for Heavy Current Quantities
- Measuring Transducers for Angle of Rotation and Position
- DC Signal Isolators, Isolating Transformers
- Power Packs, Mounting Racks
- Isolating Switch Amplifiers, Isolating Amplifiers
- Valve Control Modules, Limit Value Indicators
- Thermocouples, Resistance Thermometers
- Ex-i Equipment

Energy Management
- Energy Meters, Summators, Additional Components
- Power – Energy – Power Quality – Load Optimization
- ECS – Energy Control System
- Energy Management – Engineering
- Competent Project Management Partner

Control Technology
- Compact Controllers, Multi-Channel Control Systems
- CoDeSys and PC Worx Software Controllers

Recording Technology
- Display Recorders
- Continuous Line Recorders
- Point Recorders

Software for
- Energy Control System – Measuring Transducers – Isolating Amplifiers – Controllers









Further information about our company is available at **www.gossenmetrawatt.com**.

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