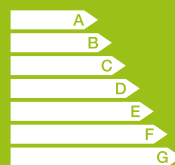
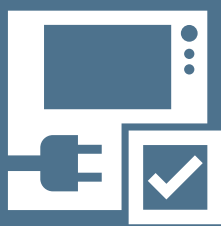
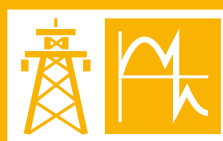


# PRODUCT OVERVIEW

## 2018/2019

TEST AND MEASUREMENT  
ENERGY TECHNOLOGY  
WORLD CLASS  
HARDWARE & SOFTWARE





PQ & ENERGY ANALYZERS

MAVOLOG PRO

Class A Power Disturbance Analyzer per IEC 61000-4-30



- Evaluation of main quality according to EN50160 with automatic report generation
- IEC 61000-4-30: 2008 Class A power quality analyser
- 4 voltage and 4 current channels with automatic range selection, 32 kHz sampling rate
- Measuring of instantaneous values of more than 140 quantities
- Waveform and transient recorder with programmable sampling time (> 600 samples / period), pre-trigger and post-trigger time
- 32 adjustable alarms, anomalies and quality reports which can be saved in the internal memory
- Frequency range from 16 Hz to 400 Hz
- RS232/485, Ethernet and USB 2.0 communication ports
- Modbus and DNP3 communication protocols
- GPS, IRIG-B (modulated and digital) and NTP real time synchronization
- Up to 20 inputs and outputs (analogue inputs/outputs, digital inputs/outputs, alarm/watchdog outputs, pulse input/outputs, tariff inputs)
- Multilingual user interface and user friendly setting- and evaluation software Mavo-View
- MAVO database software (optional)

Type	Item number
MAVOLOG PRO	—

Please ask your distributor for correct configuration

MAVOSYS 10

Modular Power Quality Monitoring System Class A



- Modular design in various layouts with 4 slots
- Input modules for 4x voltage, 4x current and 8x digital signals
- Combinations with up to four virtual analyzers in a single housing
- Local operation and visualization with an optional ¼ VGA touch-screen
- Ethernet 10/100 BaseT, RS 232 and RS 485 interfaces included as standard equipment
- TCP/IP, HTTP, XML and Modbus TCP/RTU communication protocols
- Optionally available 3G/ GSM / GPRS modems
- Time synchronization via optional GPS receiver
- Internal and external cross-triggering
- Compliant with all national and international standards for monitoring mains quality (EN, IEC, IEEE, NVE, CREG)
- Certification in accordance with IEC 61000-4-30, class A
- 1 GB internal flash memory
- Compatible with PQView, a PQ analysing data base software, more details at [www.pqview.com](http://www.pqview.com)

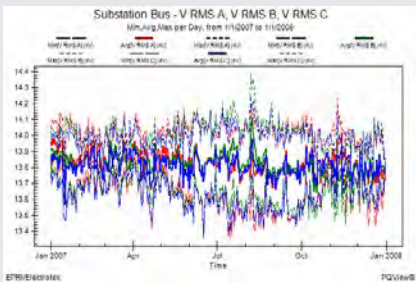
Live demo at: [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)

Type	Item number
MAVOSYS 10	—

Please ask your distributor for correct configuration

PQView

PQView Is a Multi-Component-Software System Developed for Building and Analyzing Databases of Power, Power Quality And Energy Measurements



- Data integration and management of big databases
- Import /export IEEE PQDIF and COMTRADE files
- Integrate data from more than 50 different systems
- Define and schedule automatic reports in compliance with local regulations and standards, e.g. EN50160
- Share data via web browsers on an Intranet/Internet using PQWeb®
- Reduce time to classify fault types
- Reduce time to locate faults
- Reduce time to restore power



## POWER QUALITY ANALYZER & SOFTWARE

### MAVOWATT 230 / 240 / 270



NEW



ANDROID APP ON  
Google play

Download on the  
App Store

#### Precision

- High Definition PQ & energy monitoring – 1000 Vrms, AC/DC, 512 samples/cycle
- Eight channels, 4 voltage & 4 current
- Differential voltage inputs for precise  $\Delta$  system analyzing
- Advanced PQ – IEC 61000-4-30 Class A & IEEE 1159 compliant
- Harmonics – IEC 61000-4-7, IEEE 519
- Transient capabilities – V & I – waveshape triggers. Beyond standards
- 100 cycle pre/post trigger buffer
- EN 50160 Edition 3
- Motor AnswerModule
- Motor testing & diagnosis (measurements at frequency converters)
- Calculation of inverter efficiency

#### Communications

- HDPQ app for Apple & Android with real time metering and alarm dashboard
- Ethernet, USB, Bluetooth – optional
- VNC for full remote control

#### Safe & Rugged

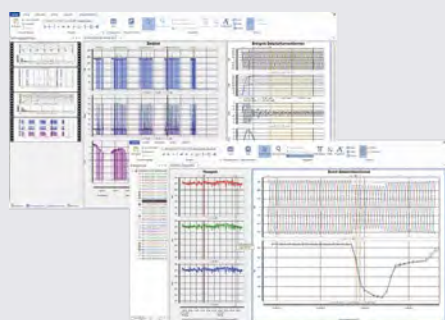
- Arc flash safety
- CE approved and UL listed
- Rugged enclosure with an easy to grip, shock absorbing, non-conductive boot
- Dropped tested to power supply cable retainer
- Automatic circuit detection and feedback on proper connection of the instrument
- User Interface: 7" WVGA color touch display, automatic setups – PQ, D&E,
- Tablet-like GUI; features: icon driven, taskbar shortcuts, dashboard

#### Productivity

- Mini-Report – Screen snapshots, XML file. Easily uploaded and emailed!
- PQ & energy dashboard's for real time alarming
- Bigger display for more productive local analysis
- Dran-View7 Software: data analysis, reporting, rescue kit, post processing

Type	Item numberr	Type	Item numberr
MAVOWATT 230	M820D	MAVOWATT 270	M820G
MAVOWATT 240	M820F	MAVOWATT 270-400	M820L

### DranView 7



NEW

- Quick visualization and analyzing of power quality and energy monitoring data
- Easier and simpler to use trough new ribbon bar, similar to any modern Microsoft program
- Scrollable chart axes, view trends, waveforms, magnitude and DFT
- True 64 bit program, fast handling of large data files
- Event filtering and sorting; drag and drop charts and axes
- Routine statistical tables, PQ supply reports, spectrum graphs for harmonics, time plots for hundreds of parameters
- Reads data in PQDIF, COMTRADE, csv and txt format
- Report writing modules with integrated text editor, snapshots/bookmarks
- Reporting according international standards IEC, EN, G5/4, NVE, GOST and other standards
- Multi-site capabilities with events filtering and time synchronization, mathematical comparisons
- Rescue Kit (adjust time stamps, flip current probes, change scaling factors, change connection type)
- Mathematical functions (calculate trends and harmonics from waveform data; separate harmonic scaling for U, I and P; add your formulas; analyze harmonic spectra)
- 10 days full demo version and video presentation available at: [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)

Type	Item number
Dranview7 DVP	Z818Z
Dranview7 DVE	Z818X

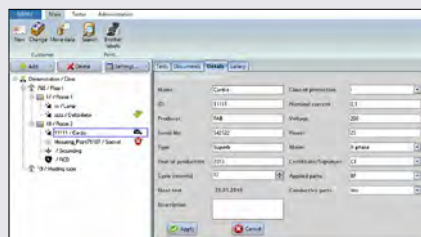


## INSTALLATION TESTER

### PROFITEST INTRO



NEW



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 (DIN VDE 0100-600) and other country-specific standards.

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.

#### Working Efficiently Around the World

- Intuitive operation
- Measuring functions can be selected directly via the rotary switch
- Background illumination
- Help functions with wiring diagrams
- International prompting (12 languages)

#### Technical Characteristics

- Low-resistance measurement for protective and equipotential bonding conductors with automatic polarity reversal

- Highly accurate 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 drop measurement
- Voltage measurement for UN 120, 230 and 400 V, phase sequence
- Individual, structurable memory for approx. 50,000 objects / measured values
- ETC (Electrical Testing Center) and GMST software for, amongst other functions, creating tree structures and documentation
- Bidirectional data exchange via USB, DDS-CAD and epiNSTRUM
- Connection of an RFID reader or a barcode scanner
- PRO-JUMPER for easy measurement cable compensation

Type	Item number
PROFITEST INTRO	M520T

## METRALINE SERIES

### METRALINE ZCHECK

#### Loop Resistance Measuring Instrument (DIN VDE0413 / EN61557)



The test instrument is used to measure earth-fault loop impedances and line impedance. The measuring range of 0 to 200  $\Omega$  (0.27  $\Omega$  to 200  $\Omega$  per VDE0413 / EN61557) allows for calculation of short-circuit current from 0 to 23 kA.

Fault loop impedance with short-circuit current with & without tripping the RCD line impedance with short-circuit current, line voltage, phase detection

Type	Item number
METRALINE ZCHECK	M507A

### METRALINE RCDCHECK

#### Multifunctional RCD & Installation Tester (DIN VDE 0100 / IEC 60364-6)



Multifunctional measuring instrument which tests the characteristics of an RCD, measures the touch voltage with and without tripping the RCD, the tripping current, the time to trip, the line voltage and fault loop impedance.

#### RCD Types: A, AC, S, F

- Testing of RCDs, IDN = 10, 30, 100, 300 und 500 mA
- Testing of RCDs with  $\frac{1}{2} \bullet \Delta N$ , 1  $\bullet \Delta N$ , 2  $\bullet \Delta N$ , (5  $\bullet \Delta N$  to 100 mA nominal current)

Type	Item number
METRALINE RCDCHECK	M507B





## INSTALLATION AND MACHINE TESTER

### PROFITEST MASTER

#### Test Instrument for IEC 60364.6 / EN 50110-1



A broad-range measuring device allows for use of the test instrument in all alternating and 3-phase electrical systems with voltages from 65 to 500 V and frequencies of 15.4 to 420 Hz.

- Loop and line impedance measurement
- Measurement of insulation resistance using nominal voltage, with variable or rising test voltage
- Low-resistance measurement
- Earth resistance measurement with all methods
- Standing-surface insulation measurement
- Structurable memory
- Testing of residual current devices (RCCBs)

- Testing of special RCDs like SRCDs, PRCDs (Schukomat, Sidos etc.), types G/R, AC, A and B
- Testing of RCCBs in IT systems
- Testing of insulation monitoring devices (IMDs)
- Testing of residual current monitoring devices (RCMs)
- Intelligent ramp
- Automatic test sequence
- Leakage current measurement with PRO-AB adapter
- Testing of determining residual voltage / detecting mains fluctuations

Type	Item number
PROFITEST MPRO	M520N
PROFITEST MTECH+	M520R
PROFITEST MXTRA	M520P

### GEOHM C

#### Earth Resistance Tester



- Earth resistance measurement in 5 ranges up to 50 kOhm
- Selective earth resistance measurement
- Soil resistivity measurement
- Voltage current measurement (TRMS) via clamp meter (optional Geohm 5)
- Voltage measurement from 10 to 250 V
- Frequency measurement from 45 to 200 Hz

- Battery monitoring and self-test; integrated memory with IrDA interface
- Extremely rugged housing
- Three or four-pole measuring method
- 1- or 2 clamp measurement (Geohm 5)

Type	Item numberr
GEOHM C	M590D

### PROFITEST PRIME

**Standards Compliant and Safe “CE Tester”, Machine- and Electric Systems Tester:**  
DIN EN 60204-1 / VDE 0113-1; IEC 60364-6 / DIN VDE 0100-600; EN 50110-1 / DIN VDE 0105-100, DIN EN 61439-1 / VDE 0660-600-1; DIN EN 62446 / VDE 0126-23; DIN EN 61851-1 / VDE 0122-1



PROFITEST PRIME is the first all-in-one test instrument in 690V AC and 800V DC networks for electrical systems, machines, switchgear, industrial equipment, wind power turbines, power generators and e-mobility. Optional PROFITEST PRIME versions are available with AC or DC high voltage test.

- Measurement of fault loop resistance without tripping RCD Types A and B
- Protective conductors measurement with 200 mA or 25A

- Insulation measurement with rising ramp
- Residual voltage measurement
- Measurement of leakage and differential current
- Testing of RCD Types A, AC, F, B, B+, EV, MI and G/R, as well as SRCDs and PRCDs
- Testing of residual current monitoring devices (RCMs)

Type	Item numberr
PROFITEST PRIME	M506A
PROFITEST PRIME DC	M506B
PROFITEST PRIME AC	M506C



## METRISO SERIES

### METRISO Series Instruments up to 1000 V



### Insulation, Low-Resistance and Voltage Measurements

Metriso	XTRA	TECH	PRO	BASE	INTRO
PI, DAR Polarization index measurements	x	—	—	—	—
Riso Uvariable = 50 ... 1000 V (Limit value 1 MΩ)	x	—	—	—	—
Riso URamp = 50 ... 1000 V Display of breakdown voltage	x	—	—	—	—
Measuring ranges Riso	10 k ... 1 TΩ	10 k ... 200 GΩ	100 k ... 100 MΩ	10 k ... 100 GΩ	10 k ... 100 GΩ
Riso U = 50, 100, 250, 500 / 1000 V	x / x	x / x	x / x	x / —	x / —
R 10 Ω ... 10 kΩ	x	x	—	x	x
RLO 0,017 ... 10 Ω	x	x	x	x	—
U 0 ... 500 / 1000 V	x / x	x / x	x / x	x / —	x / —
Backlit display	x	x	x	x	x
Discharge capacitive devices under test	x	x	x	x	x
Safety shutdown (UBatt < 8 V)	x	x	x	x	x
Measuring category CAT III 600V, CAT IV 300V	x	x	x	x	x
DAkS calibration certificate in scope of delivery (W = Proprietary certificate)	x	x	(W)	x	—

- Resistance measurement of earth installation, protective and equipotential bonding
- Voltage measurement
- Discharge measurement of floors according to EN1081
- Signalling of dangerous voltage
- Acoustic indication of threshold value
- Measuring range 10 kΩ ... 9.999 GΩ
- Low ohmic resistance measurement 0.17 ... 10 Ω with automatic pole reversal
- Electronic protected low ohmic resistance measurement.

Type	Item number	Type	Item number
METRISO INTRO	G550N	METRISO TECH	M550P
METRISO BASE	G5500	METRISO XTRA	M542S
METRISO PRO	M550R		

## INSULATION TESTER DIGITAL & ANALOG

### METRISO PRIME+, METRISO PRIME 10



### Insulation Measuring Instrument, from 50 to 10,000 Volt

**METRISO PRIME+:** A broad-range measuring device allows for use of the test instrument in all alternating and 3-phase electrical systems with voltages from 65 to 500 V.

- Universal insulation measuring instrument
- Digital indicator in illuminated display
- Integrated timer
- Special high voltage measurement cables
- Integrated memory

- Voltage measurement
- Measurement of breakdown voltage (PRIME+)
- Capacitance measurement
- Time-dependent insulation measurement, polarization index and absorption ratio, dielectric discharge
- Calibration certificate
- Guard function

Description	Type	Item number
5000 V analog	METRISO PRIME	M555T
5000 V digital	METRISO PRIME+	M5000 A02
10000 V digital	METRISO PRIME10	M555A



## PHOTOVOLTAIC PERFORMANCE AND INSTALLATION TESTER

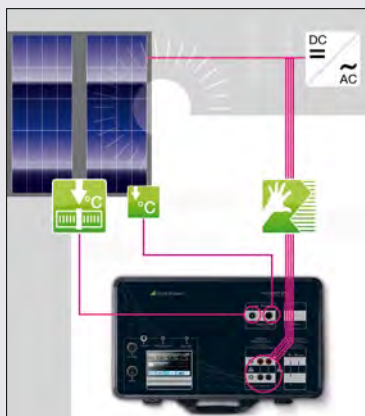
### PROFITEST PV

### Peak Power Measuring Instrument and Characteristic Curve Tracer for Photovoltaic Systems



#### Features:

- Testing in compliance with EN 62446
- Highest precision thanks to steady measurement of characteristic IU curves at the capacitive load at PV modules and strings
- Automatic conversion of measurement result to STC Values
- 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 measured characteristic I-U 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 disconnecter (1000 V/32 A DC) for all-pole disconnection of the measuring instrument from the PV generator
- Calibrated irradiation sensor per IEC/EN 60904-2 with integrated Pt1000 temperature sensor
- Integrated customer database with bidirectional data exchange
- Software for graphic visualization, evaluation and report generation with integrated module database



Connect ➔ Switch On ➔ Start Measurement ➔ Read Results ➔ Done!

Type	Item number
PROFITEST PV	M360A

### PROFITEST PV SUN MEMO / SUN-SOR

### Test Instrument for Testing PV Modules and Strings per DIN EN 62446 (VDE 0126-23)



#### Features:

- Voltage measurement: 0 ... 1,000 VDC
- Current measurement (direct): 0 ... 20 ADC
- Insulation resistance measurement
  - Measuring range: 0 ... 20 MW
  - Test voltages: 250 V / 500 V / 1,000 VDC
- Ground fault measurement: 0 ... 1,000 VDC
- Testing for protective conductor continuity: 0 ... 10 W / > 200 mA / with automatic polarity reversal
- Polarity test
- Backlit LCD panel
- Compact and rugged for service calls under harsh conditions

#### Additionally for PROFITEST PVSUN MEMO:

- Bidirectional interface
- Internal memory for the storage of 10,240 data records
- Free software tool



Type	Item number
PROFITEST PVSUN MEMO	M360D
PROFITEST SUN-SOR	Z360N



PORTABLE APPLIANCE AND WELDING MACHINE TESTER

SECUTEST BASE / BASE 10 / PRO

Universal Test Instrument for Testing Electrical Devices, Medical Devices and Welding Units  
– with Test Sequences per VDE0701-0702, IEC62353 and IEC60974-4



SECUTEST I BASE (Artikel No: M7050-V001)

- insulation test, protective conductor testing with 200 mA (+/-, ±, ~) test current, leakage current testing, testing, voltage measurement
- Measurement of leakage current with a bandwidth of up to 1 MHz
- User guidance in D, GB, F, I, E, NL, PL, CZ
- Schuko mains power connection and Schuko test socket
- Direct printout of test reports or test report management with free ETC report software
- DAkkS Calibration Certificate in German, English, French

SECUTEST I BASE 10 (Artikel No: M7050-V002)

- same as SECUTEST BASE, plus:
- 10 A (~) test current for protective conductor testing

SECUTEST I PRO (Artikel No: M7050-V003)

- same as SECUTEST BASE 10, plus
- Touch screen
  - Electrically isolated voltage measuring inputs
  - Measurements with two probes
  - Database expansions: \*
  - Import / export via ETC, USB
  - Sequence import
  - Extended location details

Please ask your distributor  
for correct configuration

GMST

Data Base and Test Report-Software for SECUTEST / SECULIFE / PROFITEST SERIES



- GMST is suitable for testing the electrical safety of electrical installations, mobile devices and welding units, as well as for function tests in the field of medical technology.
- Automatic data transfer and data communication
  - Export of test reports to data files or as print-outs
  - Report generation and label printing

- Simplified navigation, tree structure, test table
- Archiving of all information in a database
- Communication with several test instruments
- e-mail notifications
- More detailed information at: [www.gmst.eu](http://www.gmst.eu)

Type	Item number
GMST	Z712C
GMST HostService	Z712D

NEW

METRATERESTER 5+



- Large, digital LCD panel
- Mains connection testing with finger contact and indicator lamp
- Differential current measurement per
- IEC 62368 (draft), DIN VDE 0701-0702
- All measured values appear clearly at a 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

Scope of delivery:

- Factory calibration certificate

Type	Item number
METRATERESTER 5+	M700D





## PROGRAMMABLE POWER SUPPLIES & ELECTRONIC LOADS

### Syskon P Series



#### Features of Syskon Power Supplies:

- Fast rise time (< 2 ms) and fall time (70 ms in no-load condition)
- Precise setting (0,05 %, 5 digit display)
- Low ripple voltage and current
- Auto ranging V/I line 2.4 : 1
- Protections: overvoltage – overcurrent – overtemperature
- Connection of 2 or more power supplies in master-slave mode
- Up to 1700 test sequences and 15 device configurations can be programmed or imported
- Interfaces RS232, GPIB, USB, analogue
- Models ranging from 500 W to 4500 W

Type	Item number	Type	Item number
SYSKON P500	K346A	SYSKON P3000	K363A
SYSKON P800	K347A	SYSKON P4500	K364A
SYSKON P1500	K353A		

### SSP32N Power Supplies



#### Features

- Fast rise time (< 1 ms) and fall time
- Precise setting (0,15 %, 4 digit display)
- Low ripple voltage and current
- Auto ranging V/I line
- Protections: overvoltage – overcurrent – overtemperature
- Connection of 2 or more power supplies in master-slave mode
- Up to 24 test sequences and 10 device configurations can be programmed
- Interfaces RS232, GPIB, Analogue
- Models with 120W, 240W & 320W ranging from 20V to 80V

#### Applications:

- Power simulation (UID characteristic) of defined and precise voltage- and current signals in R&D
- Quality tests in main production
- Quality control of endurance, stability and precision of electronic goods
- Designed to cover most test pulses of the automotive industry

Type	Item number
SSP32N	K380A

### SPL electronic loads



#### Features

- 4 operating modes: constant current / voltage / resistance / power
- High speed sequence and transient measurement, short-circuit proof, battery discharging and other auxiliary functions
- Trigger and sense input
- Programmable current rise and fall time, steep edges
- Several groups of parameters and sequences can be saved and retrieved.
- Floating power input / no grounding
- Voltage or current control is possible with constant power
- Safety functions, amongst others adjustable current limiting

#### Applications:

- Load simulation of defined and precise voltage- and current in R&D
- Quality tests in main production
- Quality control of endurance, stability and precision of electronic goods

Type	Item number	Type	Item number
SPL 200-20	K854A	SPL 350-30	K855A
SPL 250-30	K852A	SPL 400-40	K853A



## MEASUREMENTS IN POTENTIALLY EXPLOSIVE ATMOSPHERES


### METRAHIT 27EX



#### Milliohmmeter for Use in Potentially Explosive Atmospheres

Intrinsically Safe Milliohmmeter ATEX (27EX)

- Special ATEX certified version for measuring in potentially explosive atmospheres, especially in Avionic field for measurement at aircraft surfaces (lightning protection, „leakage test“ (Wicktest))

- Intrinsically safe acc. to IEC 50020 und 50014
- Each device with ATEX certificate by INERIS 05ATEX0040  II 2 G EEx ia IIA T4

Type	Item number
METRAHIT 27EX	M227F

### METRALINE EXM25





#### Intrinsically Safe Multimeter

Thanks to their intrinsically safe design and rugged antistatic housing with protection class IP54, the instruments are particularly suited for use in mining and chemical/petrochemical industries.

 **CE CAT IV IP54**

- Measurement of voltage, resistance, current and frequency
- Approved in accordance with ATEX directive 94/9 EG for intrinsically safe and not intrinsically safe electric circuits up to 1000 V

-  II 2G Ex ib IIC T4/T6 petrochemical industry)
-  I M2 Ex ib I (coal mines)
- Highest degree of safety due to encapsulated protective resistors in DATA HOLD test probes CAT IV, 1000 V
- Direct current measurements 1 mA ...2 A
- Intrinsically save energy units, rechargeable NiMH battery or lithium battery
- Illuminated display
- Self-test and battery level indicator

Type	Item number
METRALINE EXM25	M210A

### METRAHIT A, E, S Series



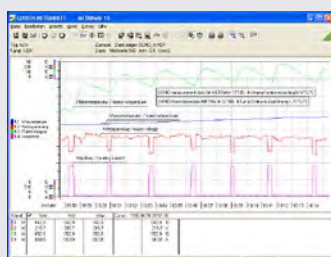
#### Multimeter and Measuring Systems

With 20x measurement functions, high accuracy and resolution of up to 60,000 digits, these meters serve all markets where high performance is required – in the laboratory and in the field. With data logging, IR interface and MetraWin software these meters are high precision measuring systems with superior price/performance ratio.

- METRAHIT Outdoor with IP 65 Rating
- Patented automatic input blocking system (ABS)
- DMM + insulation testing + smart data logging
- Safest multimeter in the world
- DAkkS traceable Calibration Certificate included
- Flash demand: [www.metrahit.eu](http://www.metrahit.eu)

### METRAwin 10

#### PC-Software for Protocols and Data Handling



- Measured values are queried from the multimeters by METRAwin 10, are managed at PC and can be displayed as Yt or XY graphs (up to 6 channels), or in tabular form (up to 10 channels)
- Measurement data can be easily imported to other Windows applications with the clipboard function at PC (e.g. Word or Excel)
- The SW runs under Windows Vista, 7, XP, 2000, NT

Type	Item number
Z3240	GTZ324000-OR0001



## MULTIFUNCTIONAL PROCESS CALIBRATORS AND MULTIMETER

### METRACAL MC



#### Calibration and Measurement: Efficient and Time-Saving Thanks to Simulation

- 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  $\Omega$
- Dual mode  $\mu$ V simultaneous calibration and measurement (U / I)
- Measuring and encoding in absolute terms and as percentage (scaled)
- Memory for measurement results: 16 Mbit
- Frequency and pulse run generators: 1 Hz to 2 kHz
- Ramp and staircase functions
- METRAwin 90-2 interface and calibration software
- Transmitter simulator (sink: 0... 24 mA)
- DAkKS calibration certificate included
- Rugged, EMC compliant design
- Precision multimeter (V, A,  $\Omega$ , F, Hz, °C / F) 30,000 (60,000) digits and triple display
- TRMS AC measurement to 1 kHz

Type	Item number
METRACAL MC	M245A

### METRAwin 90-2



#### Calibration Software for Calibrators

METRACAL MC, METRAHIT CAL and METRAHIT XTRA in combination with METRAwin 90-2 and an interface cable, the handheld calibrator with multimeter is transformed into a professional, PC-based calibration system or measuring transducers, indicators and record instruments etc.

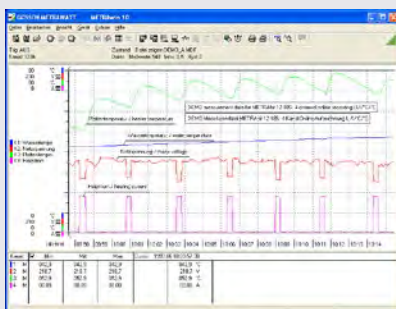
Type	Item number
METRAwin 90-2	Z211A

### METRAHIT ENERGY



#### Energy High End DMM for Power, Power Quality and Energy Measurement

- Digital hand-held multimeter with TRMS measurement including: V AC TRMS, V AC+DC TRMS with a bandwidth of 100 kHz, V DC, dB, Hz (V), Hz (A),  $\Omega$ ,  $\mu$ F, V, °C/°F (TC/RTD)
- Power measurement (W, VAR, VA, PF): active, reactive and apparent power with extreme values, power factor
- Energy measurement (Wh, VARh, Vah) active, reactive and apparent energy, mean power value with adjustable observation period and maximum value
- Mains quality analysis: recording of overvoltage and undervoltage, dips, swells, voltage peaks and transients in 0, 50 and 60 Hz systems
- Harmonic analysis: RMS values and distortion components up to the 15<sup>th</sup> harmonic at 16.7, 50, 60 and 400 Hz
- Special measuring functions: crest factor (CF), conductivity (nS), low resistance RSL, duty cycle %, cable length km
- Resolution of 60,000 digits
- Triple display, display illumination can be activated under difficult ambient lighting conditions
- 1 kHz / -3 dB switchable low-pass filter
- Direct current measurement from 10 nA to 10 A, 16 A intermittently, current measurement with current transformer clamp or sensors, transformation ratio is configurable for the display
- Large data memory for up to 300,000 measured values
- Instrument is completely remote controllable without activating the rotary switch or changing current sockets
- Compatible with METRAwin 10



Type	Item number
METRAHIT ENERGY	M249A



SOPHISTICATED DIGITAL MULTIMETER

METRAHIT ISO & METRAHIT COIL



The METRAHIT ISO and METRAHIT COIL multimeters are rugged portable measuring instruments suitable for servicing household appliances, electrical machinery (e.g. forklifts) and systems (e.g. photovoltaic). The field instruments are equipped with an internal, mains-independent power supply. Insulation resistance measurement with interference voltage detection, test voltages: 50/100/250/500/1000 V

METRAHIT ISO

Insulation Tester, TRMS Multimeter and intelligent Data Logger

METRAHIT COIL

Like METRAHIT ISO plus Electric Motor Tester, TRMS multimeter and intelligent data logger insulation test and interturn short-circuit test in combination with the COIL test adapter suited for the most common electrical drives of different performance classes.

Features:

- Insulation resistance measurement up to 3.1 GΩ with interference voltage detection, test voltages: 50/100/250/500/1000 V

- Multimeter with various functions ( $V_{DC}$ ,  $V_{AC/DC}$ ,  $V_{AC}$ ,  $\Omega$ , F,  $^{\circ}F/^{\circ}C$ ,  $I_{DC}$ ,  $I_{AC/DC}$ ,  $I_{AC}$ , continuity/diode testing, Hz)
- Switchable low-pass filter, 1 kHz/-3 dB in the V AC range
- Direct current measurement, 100 nA to 10 A and with clamps and adjustable clip-factor
- Precision temperature indicator,  $^{\circ}C$  or  $^{\circ}F$ , PT 100/1000 or K Type thermocouples
- Diode measurement and continuity testing, duty cycle measurement (COIL only)
- Acoustic signals for: continuity testing, dangerous contact voltages, exceeded overload limits
- Min - Max. Data Hold with automated storage
- Data memory and internal clock, internal/external power supply
- Bidirectional IR interface for exchanging data with PC
- DAkkS calibration certificate

Type	Item number
METRAHIT ISO	M246B
METRAHIT COIL	M246C

PROFESSIONAL DIGITAL MULTIMETER

METRAHIT IM XTRA

All-in-One: Multimeter and Milliohmmeter, Insulation Measuring Instrument, Coil Tester, Data Logger (new)



Product Highlights

- Milliohm measurement using 4-wire connection (Kelvin measurement) with 200 mA or 1 A
- Insulation tester with test voltage from 50 to 1000 V
- Coil test with 1000 V test voltage
- Milliohm measurement using 4-wire connection (Kelvin measurement) with 200 mA or 1 A
- Rlow installation testing per EN 61557-4 / VDE 0413-4
- Bonding test and equipotential bonding measurement, e.g. on aircraft outer skins (lightning protection, Wick test)

Special Features – All-in-one Instrument:

- Multimeter, insulation tester and milliohmmeter
- 4-wire milliohm measurement in a handheld instrument with 200 mA and 1 A
- Handheld instrument for field use with short-circuited coil detection at 1 kV
- Interfaces: Bluetooth, WIFI and USB
- Including DAkkS calibration certificate

Applications:

Maintenance, service and diagnostics at electric machines, drive units and systems, for example in automotive, avionics, energy and automation applications.

Type	Item number
METRAHIT IM XTRA BT	M273B
METRAHIT IM XTRA BT (including IZYTRONIQ-Software)	M273C





## PROFESSIONAL DIGITAL MULTIMETER

### METRALINE DMM 15 / DMM 16



**$3\frac{6}{7}$  Digit Universal Digital Multimeter with Analog Scale for Use in All Areas of Electrical Engineering, Especially at the International Level**

#### Features METRALINE DMM 16:

- Resolution: 6,000 digits ( $3\frac{6}{7}$  place) and analog bar graph (60 points)
- Basic accuracy: 0.5% VDC
- Bandwidth, V AC TRMS: 2 kHz
- Patented automatic blocking sockets (ABS)
- Voltage: VDC 100  $\mu$  to 1000 V and VAC TRMS 100  $\mu$  to 1000 V
- Current: IDC 10  $\mu$  to 10 A (16 A 30 sec.) and IAC TRMS 10  $\mu$  to 10 A (16 A 30 sec.)

- Resistance: 100 mOhm to 40 MOhm
- Temperature: -50.0 to +800.0° C, Type K thermocouple
- Frequency measurement: 0.1 Hz to 1 MHz
- Duty cycle measurement: 2% to 98% (1 kHz)
- RPM measurement: 60 RPM to 99.99 thousand RPM
- Capacitance measurement: 10 pF to 400 F
- Continuity and diode testing: 3 V
- Min-Max measured value storage and DATA hold
- DAkkS calibration certificate – optional
- Measuring category: 600 V CAT IV, 1000 V CAT III

Type	Item number
METRALINE DMM 15	M195A
METRALINE DMM 16	M196A

## REMOTE DISPLAY

### METRAHIT ULTRA / ULTRA BT



**Handheld Digital Multimeter with TRMS Measurement with 100 kHz Bandwidth including amongst others Measuring Functions: V AC TRMS, V AC+DC TRMS, V DC, A AC TRMS, A AC+DC TRMS, A DC dB, Hz(V), Hz(A),  $\Omega$ , V, °C / °F (TC/RTD)**

- High resolution of 310,000 digits, triple display, display illumination can be activated under difficult ambient lighting conditions
- Measurement data memory for up to 300,000 measured values
- 1 kHz / 3 dB low pass filter switchable in the alternating voltage measuring ranges
- Instrument can be remote controlled via Bluetooth interface (device variant M2488 only)

- 1 mA to 10 A direct current measurements, 10 A short-term current measurements with current transformers or sensors
- Temperature measurements with Pt100/PT 1.000
- Broad range capacitance measurements
- Internet fully remote controllable via Bluetooth IR interface (Ultra BT only)
- Connector jack for external power supply

#### Freeware for Metrahit Ultra BT:

METRALOG Android app for smartphones and tablet PCs for remote control, as well as measured value recording, analysis and display for METRAHIT ULTRA BT



Type	Item number
METRAHIT ULTRA	M507B
METRAHIT ULTRA BT	M248B





CLAMP METERS

Metraclip Clampmeter Series



- Load current measurements in electr. distribution systems
- Load current measurements at electr. consumers
- Measurement of leakage currents
- Measurement of process signal currents 4-20 mA
- Automotive, e-cars, fork-lifts
- PV systems, UPS, galvanics, avionics
- Electrical drives / frequency converters
- Motor starting currents, inrush currents
- Power measurements in DC and AC systems
- Idle power measurement and validation at welding equipment

Please ask your distributor  
for correct configuration

VOLTAGE TESTERS

PROFISAFE 690B, 690L

Voltage, Phase, and Continuity Tester Plus Phase Sequence Indicator for up to 690 V AC/DC



- Voltage test
- Phase test
- Polarity test
- Phase sequence indicator
- Continuity test
- Measuring category: CAT IV 600 V / CAT III 690 V
- VDE-GS tested
- IP65 protection – safe use even under moist conditions
- Test voltage: 6 kV
- Surge strength: >8 kV (1,2 / 50 µs)

Type	Item number
PROFISAFE 690B	M630H
PROFISAFE 690L	M630J

DUSPOL analog 1000 / expert 1000 / digital 1000

The New Generation of Voltage Testers / Voltage Measuring Instruments



- Voltage measurement from 1 to 1000 V AC / 1200 V DC
- TRMS voltage measurement
- Resistance measurement
- Diode and acoustic continuity testing
- Frequency measurement
- Contactless broken wire detector
- Power LED for measurement point illumination
- Rugged IP65 housing with powerful cable strain relief
- Measuring category: CAT IV 600 V / CAT III 1000 V

Type	Item number
DUSPOL analog 1000	M611D
DUSPOL expert 1000	M611E
DUSPOL digital 1000	M611F



## PERMANENT MEASUREMENT SYSTEM

### SMARTCONTROL

### Multifunctional Data Logger for a Wide Variety of Media



SMARTCONTROL unites logging of energy and consumption data for a wide variety of media with peak load optimization, control functions and error message management. Valuable resources can be used more efficiently, energy costs can be lastingly reduced.

Type	Item number
SMARTCONTROL	U300A

### SMARTCOLLECT

### Measurement Data and Energy Management Software

NEW

Please ask your distributor for correct configuration

SMARTCOLLECT provides:

- Measured data acquisition
- Data analysis
- Energy monitoring
- Automatic reporting

## ENERGY METERS

### ENERGYMID Energy Meters

### Professional Energy Meter for 2, 3 and 4-Wire Systems with 5 (80) A Direct Connection or 1 (6) A Transformer Connection



- **Measurement Values:** Active energy (kWh), reactive energy (kVarh), Star voltage (V), Delta voltage (V), current per phase (A), nominal cond. current (A), active power (kW), reactive energy (kVar), apparent power (kVA), power factor (cos phi), frequency (Hz), RMS distortion (THD)
- Accuracy class B for industrial, commercial and highly demanding household use
- 4 quadrant measurement (import and export)
- Universal adjustable pulse output (2-fold)
- Indicates installation errors: direction of phase rotation, phase failure, reversed transformer polarity, overload
- Communication via integrated interfaces: LON, M-Bus, Modbus RTU (Modbus TCP, BACnet in preparation)
- 4 tariffs (hardware-controlled as standard feature), plus 4 additional tariffs (software controlled)

Type	Item number
Direct connection, 5 (80) A, class B, MID for 4-wire systems, 3 x 230 / 400 V	U2289
Transformer connection, 5 (6) A and 1 (6) A, Class B, MID for 3-wire systems, 3 x 230 / 400 V, programmable CT / VT	U2387
Transformer connection, 5 (6) A and 1 (6) A, Class B, MID for 4-wire systems, 3 x 230 / 400 V, programmable CT / VT	U2389

## POWER METER

### A2000

### Multifunctional Power Meter for 3 Phase System



- Measurement of current, voltage, active, reactive and apparent power, power factor, active and reactive energy, harmonic distortion and harmonics
- 2 additional measuring inputs (optional)
- Error limits of 0.25 % for U and I
- Option: Profibus-DP, LONWORKS interface or RS 485 interface with Modbus RTU and other protocols
- Continuous recording of selected measured values for load profile and statistical purposes (optional)
- Interference recording function with high speed recording of events and pre-event history (optional)

Type	Item number
A2000 Multifunctional Power meter	A2000