

# PRODUCT OVERVIEW

## 2020/2021

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 analyzer (supports 3rd Edition)
- 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	M9200

Please ask your distributor for correct configuration

### MAVOSYS 10



#### Modular Power Quality Monitoring System Class A

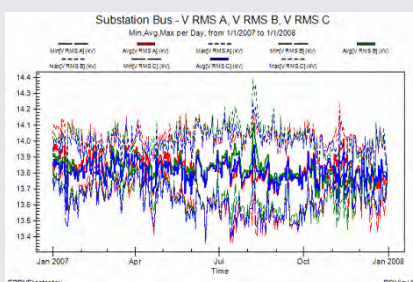
- Modular design in various layouts with 4 slots
- Input modules for 4x voltage, 4x current and 8x digital signals
- Combinations with up to four virtual analyzers in a single housing
- Local operation and visualization with an optional ¼ VGA touch-screen
- Ethernet 10/100 BaseT, RS 232 and RS 485 interfaces 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	M819

Please ask your distributor for correct configuration

### PQView



#### PQView Is a Multi-Component-Software System Developed for Building and Analysing 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

### 3-phase energy and power disturbance analyzers



**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 analysing
- 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
- 125<sup>th</sup> harmonics

#### Communications

- HD PQ 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

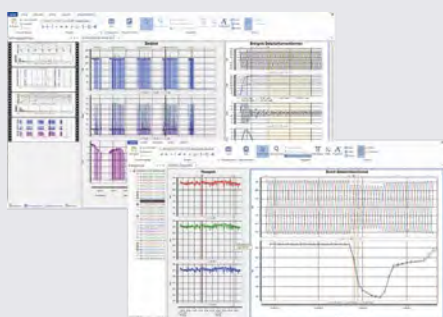
#### Productivity

- 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
- DranView 7 Software: data analysis, reporting, rescue kit, post processing

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

\* including 30/300/3000 A Flex Package

### DranView 7



**NEW**

- Quick visualization and analysing of power quality and energy monitoring data
- Easier and simpler to use through 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; analyse harmonic spectra)
- 10 days full demo version and video presentation available at: [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)

Type	Item number
DranView 7 Professional	Z818Z
DranView 7 Enterprise	Z818X



## INSTALLATION TESTER

### PROFITEST INTRO



The PROFITEST INTRO 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.

#### 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
- Structurable memory for approx. 50,000 objects
- ETC (Electrical Testing Center) and GMST software
- Connection of an RFID reader or barcode scanner
- PRO-JUMPER for easy measurement cable compensation

Type	Item number
PROFITEST INTRO	M520T

### 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 MTECH+ IQ	M535B
PROFITEST MPRO IQ	M535C
PROFITEST MXTRA IQ	M535D

### PROFITEST PRIME PROFITEST PRIME AC



#### 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
- Residual voltage measurement

- Insulation measurement with rising ramp
- Protective conductors measurement with 200 mA or 25A
- 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 number
PROFITEST PRIME	M506A
PROFITEST PRIME AC	M506C



## CHARGING STATION TESTING AND DIAGNOSTICS

### METRALINE PRO-TYP EM I/II

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



**METRALINE PRO-TYP EM I and II are single and 3-phase test adapters with Type 2 plug for testing the charging status and the electrical safety of charging stations.**

In combination with the PROFITEST MTECH+ or MXTRA test instruments, PRO-TYP EM I and II can conduct electrical safety tests at electrical charging stations in accordance with IEC 61851.

The test adapters trigger the charging process by simulating an electric vehicle.

The simulation activates the charging station's outlet, so that it can be tested with the PROFITEST MTECH+ or MXTRA test instrument.

The range of applications includes R&D and service.

#### METRALINE PRO-TYP EM I AND II SPECIALS:

- PRO-TYP EM I with measuring inputs 4 mm safety sockets for L1, L2, L3, N, PE or for the connection of a test device
- PRO-TYP EM II with measuring inputs 4 mm safety sockets for L1, L2, L3, N, PE and Schuko socket for the connection of a test device
- CP socket for PWM signal evaluation

Type	Item number
METRALINE PRO-TYP EM I	Z525F
METRALINE PRO-TYP EM II	Z525G
F2010	Z700G

### PROFITEST H+E BASE

#### Communication and Charging State Tester for Electric Charging Stations



The test instrument is connected to the charging station, in order to document the communication between the charging station and the test instrument. If the charging process doesn't start, the source of error can be quickly pinpointed.

- Diagnosis for:
  - 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

Type	Item number
PROFITEST H+E BASE	M525A

### PROFITEST E-MOBILITY

#### Adapter for Inspecting Single and 3-Phase, Mode 2 and 3 Charging Cables



PROFITEST EMOBILITY is an adapter for standard compliant testing of single and 3-phase, mode 2 and 3 charging cables by simulating faults.

- Testing of charging cables per DIN VDE 0701-0702 and manufacturer specifications using a guided test sequence with a recommended test instrument
- Testing of mode 2, mode 3 and TESLA charging cables
- Testing of connector cables with country-specific plug (type 1 plug etc.)
- Function test, i.e. tripping test by 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 per DIN VDE 0701-0702 with a recommended test instrument
- Tripping test with nominal residual current and measurement of time to trip with a recommended test instrument
- Simulation of vehicle state per EN 61851-1/VDE 0122-1
- Testing of resistance coding for vehicle inlets and vehicle connectors per EN 61851-1/VDE 0122-1
- Evaluation and documentation of the individual test steps with a recommended test instrument

Type	Item number
PROFITEST E-MOBILITY	M513R



## EARTH TESTER

### 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 number
GEOHM C GB	M590D

### GEOHM PRO / XTRA



### High-Precision Earth Testers and Low-Resistance Measuring Instruments including Measuring Method for Testing Lightning Protection Systems

- RS and RH resistance measurements via auxiliary electrodes
- 3 and 4-wire earth resistance measurement
- 3-wire earth resistance measurement with current clamps
- Measurement of interference voltages
- Measurement of interference frequencies
- Measurement even where interference voltages occur in systems with 16%, 50 and 60, as well as 400 Hz (with automatic and manual selection of the right measurement signal frequency)
- Low-resistance of the PE conductor with 200 mA (per IEC 60364-6-61)
- Measuring voltage selection (25 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)
- IZYTRON.IQ – Software ready via NEXONIQ
- Geohm XTRA with GPS

Type	Item number
GEOHM PRO	M592A
GEOHM XTRA	M592B

## 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
5 000 V analog	METRISO PRIME	M555T
5 000 V digital	METRISO PRIME+	M5000 A02
10 000 V digital	METRISO PRIME10	M555A



## PHOTOVOLTAIC PERFORMANCE AND INSTALLATION TESTER

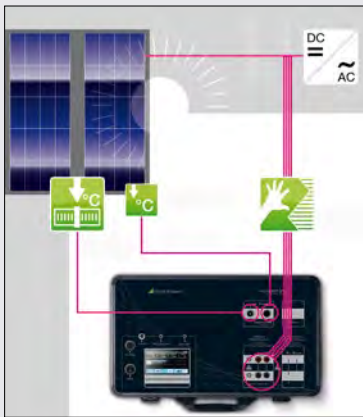
### PROFITEST PV / PV 1500

### 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.
- 20 A DC, 1500 V DC
- 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 (1500 V/20 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 1500	M360F

### 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 A DC
- 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 IQ / PRO IQ



Universal Test Instrument for Testing Electrical Devices, Medical Devices and Welding Units – with Test Sequences per VDE 0701-0702, IEC 62353 and IEC 60974-4



Please ask your distributor for correct configuration

#### SECUTEST BASE IQ (Item No: M705A)

- 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 PRO IQ (Item No: M705C)

- same as SECUTEST BASE IQ, plus
- 10 A (~) test current for protective conductor testing
  - Touch screen
  - Electrically isolated voltage measuring inputs
  - Measurements with two probes
  - Database expansions:
    - Import / export via ETC, USB
    - Sequence import
    - Extended location details

### METRALINE PAT



NEW

#### Device Tester for Testing per Directive 2009/104/EC

The METRALINE PAT is being introduced as a modern test instrument with intuitive operation. The instrument is used for testing portable operating equipment, as well as testing in accordance with DGUV regulation 3 (previously: BGV A3) and DIN VDE 0701-0702.

The METRALINE PAT test instrument is supplied with 230 V AC mains power. The measurements are saved in the METRALINE PAT data memory in a menu-driven manner. They can be transferred to a PC and IZYTRONIQ as well. The measuring functions, the measured values and the user guidance are displayed on the integrated screen, providing for convenient operation.

#### Features

- Mains polarity reversal with load monitoring
- 2-pole measurement (low-resistance, insulation, equivalent leakage current, voltage)
- Optional guided operation via Test Master app for Android with SQLITE3 database
- Green/red LED display as pass/fail indicator

#### Advantages compared to METRATESTER5+

- One test socket only => semi-automatic, no re-plugging due to relay-control
- USB
- Bluetooth and ELEQINOQ App to transfer measurement data to IZYTRONIQ

Type	Item number
METRALINE PAT	n.n.

### IZYTRONIQ

#### Protocolling Database and Test Instrument Management Software



IZYTRONIQ – New powerful protocolling data base software for most of our test and measurement instruments. It makes the entire testing sequence process simpler and more flexible. Even complex tasks with numerous measuring points and different test sequences can be processed quickly, professionally and reliably.

Here are some highlights from different IZYTRONIQ variants:

- Test management of installations, portable appliances, machines and medical devices
- Generation of tree structures for all kind of objects under test
- Test sequence management and sequence editor

- Import of memory structure, catalogs, sequences and measurements from test instruments
- Export of memory structure, catalogs and sequences to test instruments
- Flexible protocol templates
- Analysis and trend development of similar tests of an object
- Manual input of measured values
- Comprehensive statistics with percentage failure rate as PDF printout

For a detailed description please visit [www.izytron.com](http://www.izytron.com)





## BATTERY TESTER & PROGRAMMABLE POWER SUPPLIES

### Metracell BT PRO



#### Features of Metracell BT PRO:

- Simultaneous measurement of electrical resistance (Rel) and electrochemical (charge-transfer) resistance (Rct) of battery blocks
- Measurement of block voltages
- Measurement of total voltage up to 600 V
- Measurement of charging and discharging current
- Capacitance test
- Measurement of block temperatures
- Import of acid density values
- Direct connection of a DMA35 density meter from Anton Paar
- Transfer of complete battery databases
- Storage of up to 300,000 data records
- Integrated Bluetooth interface
- Battery identification by means of RFID transponders
- Battery operation for up to 10 hours

Type	Item number
METRACELL BT PRO	B100B
METRATHERM IR BASE	Z680A
CP1800	Z204A

### 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	IEEE 488 Interface	K384A

### 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	Article	Item number
SSP 120 W	32 N 20 RU 10 P	K320A
	32 N 40 RU 6 P	K321A
	32 N 80 RU 3 P	K322A
SSP 240 W	32 N 20 RU 20 P	K330A
	32 N 40 RU 12 P	K331A
SSP 320 W	32 N 80 RU 6 P	K332A
	32 N 32 RU 18 P	K334A
IEEE488 Interface for SSP 32N		K380A



## PROFESSIONAL DIGITAL MULTIMETERS

### METRAHIT AM, PM, S Series

Multimeter Functions Overview (All multimeters measure voltage, frequency, continuity and diode test)

Further Multimeter functions	Advanced			Professional			Basic			S-Series																
	METRAHIT AM BASE	METRAHIT AM PRO	METRAHIT AM TECH	METRAHIT AM XTRA	METRAHIT PM TECH	METRAHIT PM XTRA	METRAHIT PM PRIME	METRAHIT 2	METRAHIT WORLD	METRAmax 12	METRALINE EXM25	METRAHIT 27EX	METRAHIT EU PRO	METRAHIT ENERGY	METRAHIT OUTDOOR	METRAHIT 27M	METRAHIT 27I	METRAHIT ISO	METRAHIT H+E CAR	METRAHIT COIL	METRAport 40S	METRAHIT T-COM+	METRAHIT ISO AERO	METRAHIT 27AS	SECULIFE HIT AM	METRAHIT IM XTRA/E-DRIVE
Voltage level (dB)	-	-	-	-	■	■	■	-	-	-	-	■	■	-	-	-	-	-	-	-	-	■	-	-	-	-
Current - directly	-	■	■	■	■	■	■	■	■	■	■	-	■	■	■	-	-	■	-	■	■	■	■	■	-	■
Capacity measurement	-	-	■	■	■	■	■	-	■	■	-	-	■	■	-	-	■	-	■	■	■	■	■	-	■	
Temperature measurement Pt 100/1000	-	-	-	■	■	■	■	-	-	-	-	-	-	■	■	■	■	■	■	■	■	■	■	■	■	
Temperature measurement TC	■	■	■	■	■	■	■	■	-	-	-	-	■	■	■	-	-	-	-	■	■	■	■	■	■	
DATA / MIN / MAX storage	■	■	■	■	■	■	■	■	■	■	-	-	■	■	■	■	■	■	■	■	■	■	■	■	■	
Memory (measurement value)	-	-	-	■	-	■	■	-	-	-	-	■	-	■	■	■	■	■	■	■	■	-	■	■	■	
Interface	-	-	-	■	■	■	■	-	■	-	-	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Software METRAwin10 - optional	-	-	-	■	■	■	■	-	■	-	-	■	■	■	■	■	■	■	■	■	■	■	■	■	2)	
Power supply jack	-	-	-	■	-	■	■	-	-	-	-	-	■	■	■	■	■	■	■	■	■	-	■	■	3)	
<b>Special functions</b>												1)				4)				4)						
4-wire milliohm measurement	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	■	■	-	■	-	-	-	-	■	■	
Duty cycle	-	-	-	■	■	■	-	■	-	-	-	-	-	■	■	-	-	-	■	■	-	-	-	-	■	■
Cable length measurement	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	-	-	-	■	-	-	-	-	
Cable symmetry testing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	-	
Loop resistance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	-	
Insulation resistance measurement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	-	■	■	■	-	■	
Power and energy measurement	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	-	-	-	-	-	-	-	-	
Power quality (PQ)	-	-	-	-	-	-	-	-	-	-	-	-	-	■	-	-	-	-	-	-	-	-	-	-	-	
according to ATEX standard (EX)	-	-	-	-	-	-	-	-	-	-	■	■	-	-	-	-	-	-	-	-	-	-	-	-	-	

1) 27EX: no measurement of voltage, frequency, continuity and diode testing 2) IZYTRONIQ Business Starter Licence included 3) optional Power Supply Module 4) 1 kV surge test

## MEASUREMENTS IN POTENTIALLY EXPLOSIVE ATMOSPHERES

### 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.

**EX 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 EXM25A	M210A

### 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 **EX** II 2 G EEx ia IIA T4

Type	Item number
METRAHIT 27EX	M227F



## MULTIFUNCTIONAL PROCESS CALIBRATORS AND MULTIMETER

### METRACAL MC

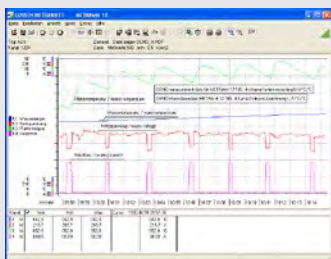


#### Calibration and Measurement: Efficient and Time-Saving Thanks to Simulation

- 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 Ω
- Dual mode V/A 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, Ω, 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 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 2000, XP, Vista, 7, 8, 10

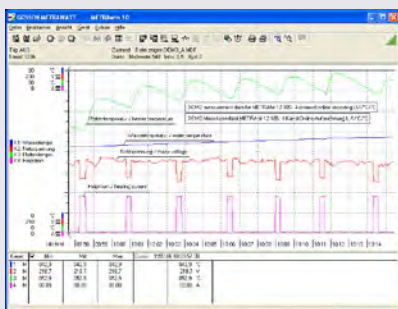
Type	Item number
Z3240	GTZ3240000R0001

### 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), Ω, μF, 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



## PROFESSIONAL DIGITAL MULTIMETERS

### METRAHIT IM XTRA / METRAHIT IM E-DRIVE

### All-in-One: Multimeter and Milliohmeter, 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
- Interturn short-circuit surge test with 1 kV by means of Coil Adapter XTRA for electrical machines
- 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 milliohmeter
- 4-wire milliohm measurement with 200 mA or 1 A with a handheld device in the field
- Handheld instrument with 1 kV surge test for field applications
- TRMS multimeter with 100 kHz bandwidth
- Interfaces: Bluetooth, WIFI or USB
- Including DAkkS calibration certificate

#### Applications:

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

Type	Item number
METRAHIT IM XTRA BT (including IZYTRONIQ Software)	M273S
METRAHIT IM E-DRIVE BT (including IZYTRONIQ Software)	M274S
COIL Adapter XTRA	Z270M

### 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 machines 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
COIL Adapter 50 mH	Z270F



## PROFESSIONAL DIGITAL MULTIMETERS

### METRAHIT PM PRIME / PRIME 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), Ω, 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 M248B 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 (PM PRIME BT only)
- Connector jack for external power supply

**Freeware for Metrahit PM PRIME BT:**

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

Type	Item number
METRAHIT PM PRIME	M248A
METRAHIT PM PRIME BT	M248B



### METRALINE DM 41, 61, 62



The METRALINE DMM digital multimeters were developed for the measurement of voltage and current, AC and DC, resistance, temperature, frequency, duty cycle, capacitance, continuity and diodes; features according to the table below. They are equipped with state-of-the-art technology and assure precision measurement results. The extremely compact and ergonomic design provides for maximized ease of use and safety.

**USP:** Input Automatic Blocking Sockets (ABS)

Type	METRALINE DM 41	METRALINE DM 61	METRALINE DM 62
Display Digits	3999 digits	6600 digits	6600 digits
Basic Accuracy	0.50 %	0.40 %	0.40 %
Display / Backlight	Single / ✓	Dual + Bargraph / ✓	Dual + Bargraph / ✓
Rubber Holster	✓	✓	✓
V DC	100 µV ... 600 V	100 µV ... 1000 V	100 µV ... 1000 V
V AC	100 µV ... 600 V	100 µV ... 1000 V	100 µV ... 1000 V
A AC	10 µA ... 10 A	10 µA ... 660 mA	10 µA ... 10 A
A DC	10 µA ... 10 A	10 µA ... 660 mA	10 µA ... 10 A
Clip Factor / Current Range	-	1:1000 / 600 A <sub>AC</sub>	-
TRMS Range	-	-	2 kHz
Resistance Range	100 mΩ ... 40 MΩ	100 mΩ ... 66 MΩ	100 mΩ ... 66 MΩ
Continuity Test / Diode Test	✓	✓	✓
Capacity Range	1 pF ... 200 µF	-	1 pF ... 40 mF
Frequency Range	0.001 Hz ... 500 kHz	-	0.01 Hz ... 10 MHz
Temperature Range	-50 °C ... +1300 °C (TC K)	-50 °C ... +1300 °C (TC K)	-50 °C ... +1300 °C (TC K)
Duty Cycle	✓	-	✓
Min/Max/Data Hold	✓	✓	✓
Peak Hold	-	✓	✓
Measurement Category	CAT III 600 V	CAT III 600 V	CAT III 600 V
Automatic Blocking Sockets ABS	✓	✓	✓
Power Supply	Battery	Battery	Battery
Weight	480 g (incl. battery)	480 g (incl. battery)	480 g (incl. battery)
Dimensions	79 x 174 x 38 mm	79 x 174 x 38 mm	79 x 174 x 38 mm
Protection Class	IP52	IP52	IP52
Warranty	3 years	3 years	3 years
Item number	M192A	M194A	M197A



## 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 solution

## 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 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

## 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 (kVAh), Star voltage (V), Delta voltage (V), current per phase (A), nominal cond. current (A), active power (kW), reactive energy (kVAh), 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
EM2281 energy meter for 2 wire system, 230 V, direct 5 (80) A 1	U2281
Direct connection, 5 (80) A, class B, MID for 4-wire systems, 3 x 230 / 400 V	U2289
EM2381 energy meter for 2-wire system, 230 V, transformer 1 (6) A (incl. 5 (6) A	U2381
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

## SOFTWARE

### Smartcollect

### Data Management Software focussing on Energy Management



Please ask your distributor for correct configuration

SMARTCOLLECT is a data management software for easy and safe measured data acquisition as well as data analysis focussing on energy management.

The powerful SMARTCOLLECT software has been particularly designed for applications in energy business and industry as well as for service providers. The software measures, stores and visualises all of the relevant consumption data of current, gas, water or heat.

#### Features

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

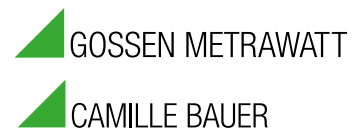
#### Benefits

- Transparency
- Recognition Of Weak Points
- Optimisation
- Cost Reduction
- User-Friendly And Flexible
- Modular Design - Low Costs
- Versatile Use
- Competent Support

#### Options to Order

- PM10 Basic Module
- PM20 Power Quality
- PM30 Visualisation

# GMC INSTRUMENTS



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