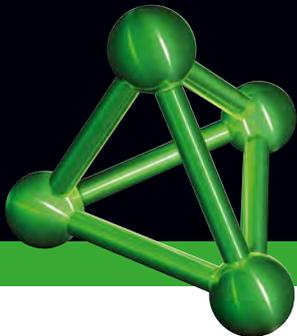




## Test and Measurement Product Overview 2014/2015



## POWER & ENERGY ANALYZERS



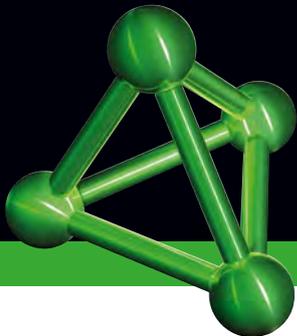
Artikel	Typ	Item number
<p><b>METRAHIT ENERGY</b>  <b>Energy High End DMM for Power, Power Quality and Energy Measurement</b></p> <ul style="list-style-type: none"> <li>▲ Digital hand-held multimeter with TRMS measurement including:  V AC TRMS, V AC+DC TRMS with a bandwidth of 100 kHz, V DC, dB, Hz (V), Hz (A), Ω, μF, V, °C/°F (TC/RTD)</li> <li>▲ Power measurement (W, VAR, VA, PF): active, reactive and apparent power with extreme values, power factor</li> <li>▲ Energy measurement (Wh, VARh, Vah) active, reactive and apparent energy, mean power value with adjustable observation period and maximum value</li> <li>▲ Mains quality analysis: recording of overvoltage and undervoltage, dips, swells, voltage peaks and transients in 0, 50 and 60 Hz systems</li> <li>▲ Harmonic analysis: RMS values and distortion components up to the 15<sup>th</sup> harmonic at 16.7, 50, 60 and 400 Hz</li> <li>▲ Special measuring functions: crest factor (CF), conductivity (nS), low resistance RSL, duty cycle %, cable length km</li> <li>▲ Resolution of 60,000 digits</li> <li>▲ Triple display, display illumination can be activated under difficult ambient lighting conditions</li> <li>▲ 1 kHz / -3 dB switchable low-pass filter</li> <li>▲ 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</li> <li>▲ Large data memory for up to 300,000 measured values</li> <li>▲ Instrument is completely remote controllable without activating the rotary switch or changing current sockets</li> </ul>	METRAHIT ENERGY	M249A
<p><b>MAVOSYS 10</b>  <b>Modular Power Quality Monitoring System Class A</b></p> <ul style="list-style-type: none"> <li>▲ Modular design in various layouts with 4 slots</li> <li>▲ Input modules for 4x voltage, 4x current and 8x digital signals</li> <li>▲ Combinations with up to four virtual analyzers in a single housing</li> <li>▲ Local operation and visualization with an optional ¼ VGA touch-screen</li> <li>▲ Ethernet 10/100 BaseT, RS 232 and RS 485 interfaces included as standard equipment</li> <li>▲ TCP/IP, HTTP, XML and Modbus TCP/RTU communication protocols</li> <li>▲ Optionally available 3G/ GSM / GPRS modems</li> <li>▲ Time synchronization via optional GPS receiver</li> <li>▲ Internal and external cross-triggering</li> <li>▲ Compliant with all national and international standards for monitoring mains quality (EN, IEC, IEEE, NVE, CREG)</li> <li>▲ Certification in accordance with IEC 61000-4-30, class A</li> <li>▲ 1 GB internal flash memory</li> </ul> <p>Live demo at: <a href="http://www.gossenmetrawatt.com">www.gossenmetrawatt.com</a></p>	MAVOSYS 10	—

Please ask your distributor for correct configuration

POWER QUALITY ANALYZER & SOFTWARE

Artikel	Typ	Item number
<p><b>MAVOWATT I 20 / 30 / 40 / 70</b>  <b>Energy and Power Quality Analyzer family</b></p> <ul style="list-style-type: none"> <li>▲ Power and mains disturbance analysis</li> <li>▲ Harmonic analysis per EN 61000-4-7</li> <li>▲ Mains quality per EN50160 with statistic bar chart</li> <li>▲ Flicker analysis per EN 61000-4-15</li> <li>▲ Recording of switch-on effects and fault note</li> <li>▲ Integrated analysis module for the direction of the voltage drop, switching tops of the power factor correction and the quality of motors Extended functionality of the power analysis Measurement of fast transients with 1 MHz sampling rate (Mavowatt 70)</li> <li>▲ 8 measuring channels: 4 for voltage (differential) and 4 for current (current sensor), for measurements at 50 / 60 Hz power frequency</li> <li>▲ Data storage to CompactFlash memory cards ≥4 GB (scope of supply)</li> <li>▲ Power supply via charging device 90..264 V / 47..63 Hz</li> <li>▲ Built-in accumulator for up to 3 hour operating time</li> <li>▲ Optional RS232, USB or LAN interface</li> <li>▲ Optional current measuring accessories</li> <li>▲ High performance DranView PC analysis and evaluation software is available</li> <li>▲ Special version for 50 / 60 Hz and 400 Hz mains frequency - MAVOWATT70-400</li> </ul>	<p>MAVOWATT 30  MAVOWATT 40  MAVOWATT 70  MAVOWATT 70-400 Set</p>	<p><b>M818A</b>  <b>M817B</b>  <b>M817C</b>  <b>M817P</b></p>
<p><b>DranView6</b>  <b>Evaluation and Analysis Software for Mavowatts</b>  <b>(PRO and Enterprise Versions)</b></p> <ul style="list-style-type: none"> <li>▲ Recognized as the most powerful PQVisualization, Analyzis and Report writing Software</li> <li>▲ Easy to use and most flexible in operation</li> <li>▲ Routine Statisticable tables, PQ Supply Reports, Spectrum Graphs for Harmonics, Time Plots for hundreds of parameters</li> <li>▲ Compatible with analyzers from other manufacturers which deliver data in PQDIF, COMTRADE, csv and txt format.</li> <li>▲ Scrollable, Flexible Diagrams</li> <li>▲ Range Marker and delta Function</li> <li>▲ Customer-Specific and Automated Reports</li> <li>▲ Rescue Kit</li> <li>▲ Customized Views</li> <li>▲ Harmonic Tool</li> <li>▲ Event Tool</li> <li>▲ Events Table</li> <li>▲ Mathematic function</li> <li>▲ Snapshots</li> <li>▲ Comments and Images</li> <li>▲ 10 days full demo version available at:  <a href="http://www.gossenmetrawatt.com">www.gossenmetrawatt.com</a></li> </ul>	<p>DRANVIEW 6  DVP-PX  DVE-PX</p>	<p><b>Z818D</b>  <b>Z818E</b></p>





## METRALINE SERIES



Artikel

Typ

Item number

### METRALINE | ZCHECK

#### Loop Resistance Measuring Instrument

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.

The **METRALINE ZCHECK** allows for the evaluation of measured impedance in consideration of type, nominal current and disconnection time. A table with the parameters of various protective devices is included in device memory.

#### The following measurements can be performed with the METRALINE Zcheck:

- ▲ Fault loop impedance with short-circuit current
- ▲ Fault loop impedance with short-circuit current without tripping the RCD
- ▲ Line impedance with short-circuit current
- ▲ Line voltage
- ▲ Phase detection

#### Features:

- ▲ Table of common protective devices can be displayed
- ▲ Digital display, backlit color OLED display
- ▲ Switching between brief and detailed representation
- ▲ LED for measurement point illumination
- ▲ Patented means of securing test probes
- ▲ Compact and rugged

**For service calls under harsh conditions and laboratory use**

METRALINE  
ZCHECK

M507A



### METRALINE | RCDCHECK

#### Testing of Residual Current Devices (RCCBs)

As indicated by the designation, this is a measuring instrument which tests the characteristics of an RCD. In particular, this involves the measurement of touch voltage, disconnection time and breaking current for type A, AC (impermissible in Germany), and S RCDs, as well as type F mixed frequency RCDs as of recently.

- ▲ Measurement of touch voltage without tripping the RCCB
- ▲ Touch voltage is measured with reference to nominal residual current using 1/3 of the nominal residual current value. Line impedance with short-circuit current
- ▲ Tripping test with nominal residual current, measurement of time to trip
- ▲ Special tests for systems and RCDs
- ▲ Testing systems and RCDs with rising residual current including indication of tripping current Digital display, backlit color OLED display
- ▲ Testing of RCDs,  $I_{DN} = 10, 30, 100, 300$  und 500 mA
- ▲ Testing of RCDs with  $\frac{1}{2} \cdot I_{DN}, 1 \cdot I_{DN}, 2 \cdot I_{DN}, (5 \cdot I_{DN}$  to 100 mA nominal current)
- ▲ Testing RCDs with half-waves (pulsating direct current) for determining time to trip and tripping current
- ▲ Testing of special RCDs, selective S, type AC, type A, type F
- ▲ Measurement of line voltage and fault loop impedance

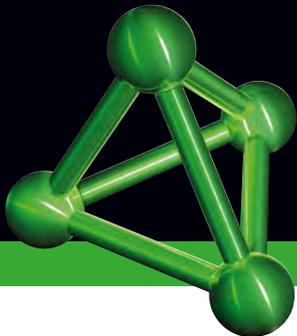
METRALINE  
RCDCHECK

M507B

INSTALLATION AND MACHINE TESTER

Artikel	Typ	Item number
<p><b>PROFITEST I MASTER</b>  <b>Test Instrument for IEC 60364.6 / EN 50110-1</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>▲ Loop and line impedance measurement</li> <li>▲ Measurement of insulation resistance using nominal voltage, with variable or rising test voltage</li> <li>▲ Low-resistance measurement</li> <li>▲ Earth resistance measurement with all methods</li> <li>▲ Standing-surface insulation measurement</li> <li>▲ Testing of residual current devices (RCCBs)</li> <li>▲ Testing of special RCDs like SRCDs, PRCDs (Schukomat, Sidos etc.), types G/R, AC, A and B</li> <li>▲ Testing of RCCBs in IT systems</li> <li>▲ Testing of insulation monitoring devices (IMDs)</li> <li>▲ Testing of residual current monitoring devices (RCMs)</li> <li>▲ Intelligent ramp</li> <li>▲ Automatic test sequence</li> <li>▲ Leakage current measurement with PRO-AB adapter</li> <li>▲ Testing of Determining residual voltage / detecting mains fluctuations</li> </ul>	<p>PROFITEST            MBASE            MPRO            MTECH            MXTRA</p>	<p><b>M520M</b>  <b>M520N</b>  <b>M520O</b>  <b>M520P</b></p>
<p><b>GEOHM C</b>  <b>Earth Resistance Tester</b></p> <ul style="list-style-type: none"> <li>▲ Earth resistance measurement in 5 ranges up to 50 kOhm</li> <li>▲ Selective earth resistance measurement</li> <li>▲ Soil resistivity measurement</li> <li>▲ VoltageCurrent measurement (TRMS) via clamp meter (optional Geohm 5)</li> <li>▲ Voltage measurement from 10 to 250 V</li> <li>▲ Frequency measurement from 45 to 200 Hz</li> <li>▲ Battery monitoring and self-testIntegrated memory with IrDA interface</li> <li>▲ Extremely rugged housing</li> <li>▲ Three or four-pole measuring method</li> <li>▲ 1- or 2 clamp measurement (Geohm 5)</li> </ul>	<p>GEOHM C</p>	<p><b>M590A</b></p>
<p><b>MetraMachine 204/2,5+GB &amp; 439/5,4+/L/GB</b>  <b>„CE - Tester“ - measuring instrument for testeing acc. EN 6024, VDE 0113, EN 60439</b></p> <p>Measuring instrument for protective conductor, insulation and residual voltage measurements per EN 60204, VDE 0113 and other similar standards at machinery and related equipment.</p> <ul style="list-style-type: none"> <li>▲ Protective conductor system measurements</li> <li>▲ Insulation resistance measurements</li> <li>▲ Residual voltage tests</li> <li>▲ Leakage current measurements</li> <li>▲ Memory for measured values</li> <li>▲ PC communication and documentation</li> </ul>	<p>MetraMachine            204/2,5+/GB            439/5,4+/L/            GB</p>	<p><b>M504H</b>  <b>M504K</b></p>





## INSULATION TESTER DIGITAL & ANALOG



Artikel

### METRISO 5000 D-PI

#### Insulation Measuring Instrument, from 100 to 5.000 Volt

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.

- Universal insulation measuring instrument
- ▲ Digital indicator in illuminated display
- ▲ Integrated timer
- ▲ Special high voltage measurement cables
- ▲ Integrated memory
- ▲ Voltage measurement
- ▲ Measurement of breakdown voltage
- ▲ Capacitance measurement
- ▲ Time-dependent insulation measurement, polarization index and absorption ratio, dielectric discharge
- ▲ DakkS calibration certificate
- ▲ Guard function

Typ

METRISO  
5000 D-PI

Item  
number

M5810 A02

Please ask your distributor  
for correct configuration

### METRISO I G series

#### Insulation, Low-resistance and Voltage Measurements

- ▲ Digital and analogue display, backlit
- ▲ Signalling of dangerous contact voltage
- ▲ Overvoltage protection - protects the instrument in the event of inadvertent connection to mains power
- ▲ Fuse link for all resistance measuring ranges
- ▲ Voltage measurement up to 500 e.g. 1000 V
- ▲ Compact and rugged - for service calls under harsh conditions and laboratory use
- ▲ Test resistance of 10 MΩ per EN 50110 / VDE 0105- 100 (not with G500MM)
- ▲ DAkkS calibration certificate
- ▲ EN 61557-1, -2, -4, -10

METRISO  
G500MM  
G500  
G1000  
G1000+  
G1000A

G550E  
G550D  
M550C  
M550B  
M542A

### METRAHIT I ISO

#### Insulation tester , 4 ¾ TRMS Multimeter and Intelligent Data Logger

Measuring instrument for protective conductor, insulation and residual voltage measurements per EN 60204, VDE 0113 and other similar standards at machinery and related equipment.

- ▲ Insulation resistance measurement with interference voltage detection, test voltages: 50/100/250/500/1000 V
- ▲ Multimeter with various functions (V, Ω, F, Hz)
- ▲ Switchable low-pass filter, 1 kHz/-3 dB in the V AC range
- ▲ Direct current measurement, 100 nA to 10 A
- ▲ Precision temperature indicator, °C or °F
- ▲ Diode measurement and continuity testing
- ▲ Acoustic signals for: continuity testing, dangerous contact voltages, exceeded overload limits
- ▲ Min - Max value storage
- ▲ Data memory and internal clock, int./external power supply
- ▲ Bidirectional IR interface for exchanging data with PC
- ▲ DAkkS calibration certificate

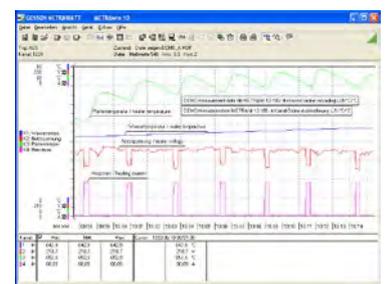
METRAHIT ISO

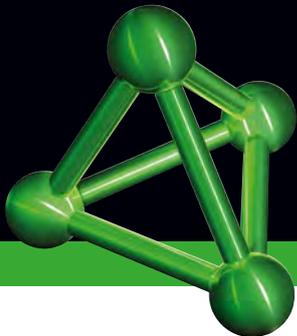
M246B



PROFESSIONAL DIGITAL MULTIMETER

Artikel	Typ	Item number
<p><b>METRALINE ISO CHECK</b>  <b>Insulation Resistance Measurement</b></p> <p>The test instrument allows for the measurement of insulation resistance with test voltages between 50 and 1000 V in accordance with VDE 0413-1,-2 (EN 61557-1,-2). The measuring range is 100 kΩ to 1 GΩ.</p> <ul style="list-style-type: none"> <li>▲ Measurement of insulation resistance at voltage-free devices and systems, up to 1000 V depending upon variant</li> <li>▲ Measurement of surge protection devices, up to 1000 V depending upon variant</li> <li>• Checking of test objects for absence of voltage</li> <li>▲ Insulation resistance measurement with test voltage from 50 to 1000 V</li> <li>▲ Voltage measurement to 600 V</li> <li>▲ Measurement of surge protection devices with test voltage from 50 to 1000 V</li> <li>▲ Table of common varistors can be displayed</li> <li>▲ Digital display, backlit color OLED display</li> <li>▲ Indication of dangerous touch voltage</li> <li>▲ LED for measurement point illumination</li> <li>▲ Patented means of securing test probes</li> <li>▲ Compact and rugged</li> <li>▲ For service calls under harsh conditions and laboratory use</li> </ul>	<p>METRALINE ISO CHECK</p>	<p>M507C</p>
<p><b>METRAHIT A, E, S Series</b>  <b>Multimeter and Measuring Systems</b></p> <p><b>Applications:</b></p> <p>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.</p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>▲ METRAHIT Outdoor with OP 65 Rating</li> <li>▲ Patented automatic input blocking system (ABS)</li> <li>▲ Intrinsically safe milliohmmeter</li> <li>▲ DMM + insulation testing + smart data logging</li> <li>▲ Safest multimeter in the world</li> <li>▲ DAkkS traceable Calibration Certificate included</li> <li>▲ Flash demand: <a href="http://www.metrahit.eu">www.metrahit.eu</a></li> </ul>	<p style="text-align: center; background-color: #4CAF50; color: white; padding: 5px; transform: rotate(-2deg);">Please ask your distributor to choose the best multimeter for you</p>	
<p><b>METRAwin 10</b>  <b>PC software for protocols and data handling</b></p> <ul style="list-style-type: none"> <li>▲ 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)</li> <li>▲ Measurement data can be easily imported to other Windows applications with the clipboard function at PC (e.g. Word or Excel)</li> <li>▲ The SW runs under Windows Vista, 7, XP, 2000, NT</li> </ul>	<p>Z3240</p>	<p>GTZ324000-0R0001</p>





## PROFESSIONAL DIGITAL MULTIMETER

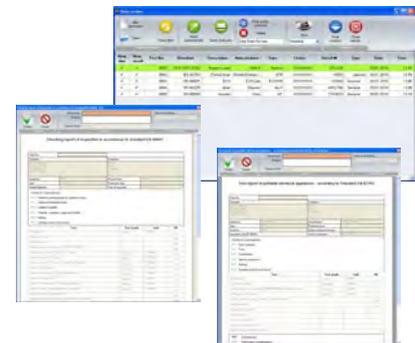


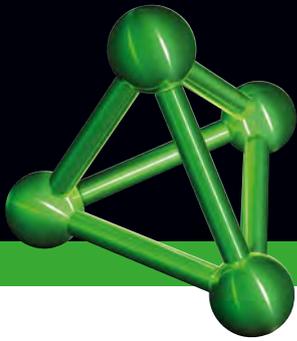
Artikel	Typ	Item number
<p><b>METRALINE   DMM 15 / DMM 16</b></p> <p><b>36/7 Digit Universal Digital Multimeter with Analog Scale for Use in All Areas of Electrical Engineering, especially at the International Level</b></p> <p>Features METRALINE   DMM 16:</p> <ul style="list-style-type: none"> <li>Resolution: 6000 digits (3 6/7 place) and analog bar graph (60 points)</li> <li>Basic accuracy: 0.5% VDC</li> <li>Bandwidth, V AC TRMS: 2 kHz</li> <li>Patented automatic blocking sockets (ABS)</li> <li>Voltage: VDC 100 <math>\mu</math> to 1000 V and VAC TRMS 100 <math>\mu</math> to 1000 V</li> <li>Current: IDC 10 <math>\mu</math> to 10 A (16 A 30 sec.) and IAC TRMS 10 <math>\mu</math> to 10 A (16 A 30 sec.)</li> <li>Resistance: 100 mOhm to 40 MOhm</li> <li>Temperature: -50.0 to +800.0° C, type K thermocouple</li> <li>Frequency measurement: 0.1 Hz to 1 MHz</li> <li>Duty cycle measurement: 2% to 98% (1 kHz)</li> <li>RPM measurement: 60 RPM to 99.99 thousand RPM</li> <li>Capacitance measurement: 10 pF to 400 F</li> <li>Continuity and diode testing: 3 V</li> <li>Min-Max measured value storage and DATA hold</li> <li>DAkKS calibration certificate - optional</li> <li>Measuring category: 600 V CAT IV, 1000 V CAT III</li> </ul>	<p>METRALINE DMM 15 DMM 16</p>	<p>M195A M196A</p>
<p><b>METRAHIT   ULTRA / ULTRA BT</b> </p> <p><b>Handheld digital multimeter with TRMS measurement with 100 kHz bandwidth including amongst other 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), <math>\Omega</math>, V, °C / °F (TC/RTD)</b></p> <ul style="list-style-type: none"> <li>High resolution of 310,000 digits, triple display, display illumination can be activated under difficult ambient lighting conditions</li> <li>Measurement data memory for up to 300,000 measured values</li> <li>1 kHz / 3 dB low pass filter switchable in the alternating voltage measuring ranges</li> <li>Instrument can be remote controlled via Bluetooth interface (device variant M2488 only)</li> <li>1 mA to 10 A direct current measurements, 10 A short-term current measurements with current transformers or sensors</li> <li>Temperature measurements with Pt100/PT 1.000</li> <li>Broad range capacitance measurements</li> <li>Internet fully remote controllable via Bluetooth IR interface (Ultra BT only)</li> <li>Connector jack for external power supply</li> </ul> <p><b>Freeware for Metrahit Ultra BT:</b> App for smartphone or tablet with Android TM for the Bluetooth variant</p> <div style="text-align: right;">    </div>	<p>METRAHIT ULTRA ULTRA BT</p>	<p>M248A M248B</p>

PORTABLE APPLIANCE AND WELDING MACHINE TESTER

Artikel	Typ	Item number
<p><b>SECUTEST I SIII+</b></p> <p><b>Universal Test Instrument for Testing the Electrical Safety of Electrical Devices in Accordance with Safety Legislation IEC 62368 (draft), VDE 0701-0702, Medical Device Regulations, as well as Final Inspection Testing in Production</b></p> <ul style="list-style-type: none"> <li>▲ Menu driven test sequences in compliance with the standards including automatic detection of protection classes I + II</li> <li>▲ Automatic adaptation to either 110 V / 60 Hz or 230 V / 50 Hz mains power</li> <li>▲ Convenient memory and report generating functions</li> <li>▲ Expanded data storage and reports generating via optional, external memory</li> <li>▲ Expandable with optional accessories for 3-phase devices</li> <li>▲ Application-specific configuration</li> <li>▲ Testing</li> </ul>	<p>SECUTEST SIII</p>	<p>M7010</p>
<p><b>pat Manager</b></p> <p><b>Data base and test report software for SECUTEST / SECULIFE ST and the (P)SI module</b></p> <ul style="list-style-type: none"> <li>▲ Easy, clear-cut archiving/substantiation of tested devices within the company/departments</li> <li>▲ Creation of test history for each device</li> <li>▲ Printouts (paper or PDF file) of test reports, inspection cards, stickers</li> <li>▲ Automatic scheduling and verification of the validity of tests</li> <li>▲ E-mail notification of past-due and upcoming tests</li> <li>▲ Modern, user-friendly interface</li> </ul>	<p>patManager</p>	<p>Z712A</p>
<p><b>METRATESTER I 5+</b></p> <p><b>Instrument for Testing the Electrical Safety of Electrical Equipment per IEC 62368 (draft), VDE 0701-0702</b></p> <ul style="list-style-type: none"> <li>▲ Large, digital LCD panel</li> <li>▲ Mains connection testing with finger contact and indicator lamp</li> <li>▲ Differential current measurement per</li> <li>▲ IEC 62368 (draft), DIN VDE 0701-0702</li> <li>▲ All measured values appear clearly at a large digital display</li> <li>▲ Exceeded limit values are indicated optically and acoustically</li> <li>▲ Dimensions (W x H x D): 190 x 140 x 95 mm, weight: approx. 1.3 kg</li> </ul> <p><b>Scope of delivery:</b></p> <ul style="list-style-type: none"> <li>▲ Factory calibration certificate</li> </ul>	<p>METRATESTER 5+</p>	<p>M700D</p>

Please ask your distributor for correct configuration





## PROGRAMMABLE POWER SUPPLIES & ELECTRONIC LOADS



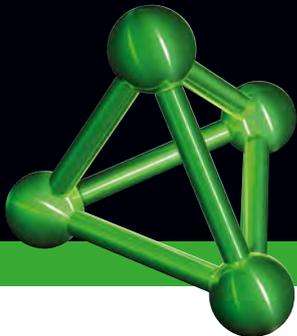
Artikel	Typ	Item number	
<b>Syskon P Series and SSP 32N series</b> <b>Programmable power supplies 120 W – 4500 W</b>  <b>Features of Syskon Power Supplies:</b> <ul style="list-style-type: none"> <li>▲ Fast rise time (&lt; 2 ms) and fall time (70 ms in no-load condition)</li> <li>▲ Precise setting(0,05 %, 5 digit display)</li> <li>▲ Low ripple voltage and current</li> <li>▲ Auto ranging V/I line 2.4 : 1</li> <li>▲ Protections: Over Voltage – Over Current – Over Temperature</li> <li>▲ Connection of 2 or more power supplies in master-slave mode</li> <li>▲ Up to 1700 test sequences and 15 device configurations can be programmed or imported</li> <li>▲ Interfaces RS232, GPIB, USB, analogue</li> <li>▲ Models ranging from 500 W to 4500 W</li> </ul> <b>Features of SSP32N Power Supplies:</b> <ul style="list-style-type: none"> <li>▲ Fast rise time (&lt; 1 ms) and fall time</li> <li>▲ Precise setting (0,15 %, 4 digit display)</li> <li>▲ Low ripple voltage and current</li> <li>▲ Auto ranging V/I line</li> <li>▲ Protections: Over Voltage – Over Current – Over Temperature</li> <li>▲ Connection of 2 or more power supplies in master-slave mode</li> <li>▲ Up to 24 test sequences and 10 device configurations can be programmed</li> <li>▲ Interfaces RS232, GPIB, Analogue</li> <li>▲ Models with 120W, 240W &amp; 320W ranging from 20V to 80V</li> </ul> <b>Applications:</b> <ul style="list-style-type: none"> <li>▲ Power simulation (UID characteristic) of defined and precise voltage- and current signals in R&amp;D</li> <li>▲ Quality tests in main production</li> <li>▲ Quality control of endurance, stability and precision of electronic goods</li> <li>▲ Designed to cover most test pulses of the automotive industry</li> </ul> <b>Features of SPL electronic loads:</b> <ul style="list-style-type: none"> <li>▲ 4 operating modes: constant current / voltage / resistance / power</li> <li>▲ High speed sequence and transient measurement, short-circuit proof, battery discharging and other auxiliary functions</li> <li>▲ Trigger and sence input</li> <li>▲ Programmable current rise and fall time, steep edges</li> <li>▲ Several groups of parameters and sequences can be saved and retrieved.</li> <li>▲ Floating power input / no grounding</li> <li>▲ Voltage or current control is possible with constant power</li> <li>▲ Safety functions, amongst others adjustable current limiting</li> </ul> <b>Applications:</b> <ul style="list-style-type: none"> <li>▲ Load simulation of defined and precise voltage- and current in R&amp;D</li> <li>▲ Quality tests in main production</li> <li>▲ Quality control of endurance, stability and precision of electronic goods</li> </ul>	SYSKON P1500 P3000 P4500	K353A K363A K364A	
		SSP32N	K380A
		SPL 250-30 SPL 400-40	K852A K853A

Complete range at [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)

MULTIFUNCTIONAL PROCESS CALBRATORS AND MULTIMETER

Artikel	Typ	Item number
<p><b>METRACAL MC</b></p> <p><b>Calibration and Measurement: Efficient and Time-Saving thanks to Simulation</b></p> <ul style="list-style-type: none"> <li>▲ 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</li> <li>▲ Dual mode <math>\mu</math>V simultaneous calibration and measurement (U / I)</li> <li>▲ Measuring and encoding in absolute terms and as percentage (scaled)</li> <li>▲ Memory for measurement results: 16 Mbit</li> <li>▲ Frequency and pulse run generators: 1 Hz to 2 kHz</li> <li>▲ Ramp and staircase functions</li> <li>▲ METRAwin 90-2 interface and calibration software</li> <li>▲ Transmitter simulator (sink: 0... 24 mA)</li> <li>▲ DAkkS calibration certificate included</li> <li>▲ Rugged, EMC compliant design</li> <li>▲ Precision multimeter (V, A, Ω, F, Hz, °C / F) 30,000 (60,000) digits and triple display</li> <li>▲ TRMS AC measurement to 1 kHz</li> </ul>	METRACAL MC	M245A
<p><b>METRAWIN 90-2</b></p> <p><b>Calibration Software for Calibrators</b></p> <p>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 for measuring transducers, indicators and record instruments etc.</p>	METRAWin 90-2	Z211A
<p><b>METRAHIT CAL</b></p> <p><b>Multifunctional Calibrator for Process Engineering – 18 Calibrator Functions.</b></p> <p>As a handheld instrument, it's suitable for precise, on-site calibration and inspection tasks, as well as for test department and laboratory work, in process engineering, control room and equipment manufacturing, general measuring technology and many other applications.</p> <ul style="list-style-type: none"> <li>▲ Universal calibrator, simulator mA, mV ...V, 5 ...2000 Ω, °C / °F, Pt100 / 1000, Ni100 / 1000, Thermocouples: J, L, T, U, K, E, S, R, B, N</li> <li>▲ Frequency and pulse run generator: 1 Hz ...1000 Hz</li> <li>▲ Ramp and staircase functions</li> <li>▲ Easy operation</li> <li>▲ IR PC nterface, optionally Metrawin 90-2 calibration software</li> <li>▲ Transmitter simulator: sink: 0 ...24 mA</li> <li>▲ DAkkS calibration certificate included as standard feature</li> <li>▲ Rugged, EMC compliant design, protection class IP 54</li> </ul>	METRAHIT CAL	M244A





## PHOTOVOLTAIC PERFORMANCE AND INSTALLATION TESTER



Artikel	Typ	Item number
<p><b>PROFITEST I PV</b>  <b>Peak Power Measuring Instrument and Characteristic Curve Tracer for Photovoltaic Systems</b></p> <ul style="list-style-type: none"> <li>▲ Testing in Compliance with EN 62446</li> <li>▲ Highest precision thanks to steady measurement of characteristic IU curves at the capacitive load at PV modules and strings</li> <li>▲ Patented calculation process for evaluating PV generators without knowledge of the manufacturer's specifications.</li> <li>▲ Patented calculation process for determining the generator's internal series resistance based solely on a measured characteristic I-U curve.</li> <li>▲ Separate measurement of temperatures at the irradiation sensor and the back of the module for increased measuring accuracy.</li> <li>▲ 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</li> <li>▲ Calibrated irradiation sensor per IEC/EN 60904-2 with integrated Pt1000 temperature sensor</li> <li>▲ Integrated customer database with bidirectional data exchange</li> <li>▲ Software for graphic visualization, evaluation and report generation with integrated module database</li> </ul>	PROFITEST PV	M360A
<p><b>PROFITEST I PVSUN MEMO</b>  <b>Test Instrument for Testing PV Modules and Strings per DIN EN 62446 (VDE 0126-23)</b></p> <ul style="list-style-type: none"> <li>▲ Voltage measurement: 0 ... 1,000 VDC</li> <li>▲ Current measurement (direct): 0 ... 20 A DC</li> <li>▲ Insulation resistance measurement <ul style="list-style-type: none"> <li>- Measuring range: 0 ... 20 MW</li> <li>- Test voltages: 250 V / 500 V / 1,000 VDC</li> </ul> </li> <li>▲ Ground fault measurement: 0 ... 1,000 VDC</li> <li>▲ Testing for protective conductor continuity: <ul style="list-style-type: none"> <li>- 0 ... 10 W / &gt; 200 mA / with automatic polarity reversal</li> </ul> </li> <li>▲ Polarity test</li> <li>▲ Backlit LCD panel</li> <li>▲ Compact and rugged for service calls under harsh conditions <ul style="list-style-type: none"> <li>- Additionally for PROFITEST PVSUN MEMO:</li> </ul> </li> <li>▲ Bidirectional interface</li> <li>▲ Internal memory for the storage of 10,240 data records</li> <li>▲ Free software tool</li> </ul>	PROFITEST PVSUN MEMO	M360D

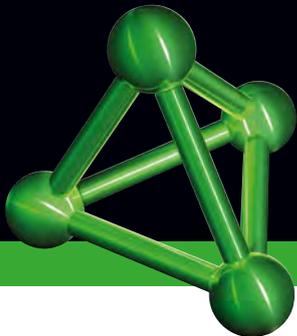
VOLTAGE TESTER AND POWER QUALITY ANALYZER

Artikel	Typ	Item number
<p><b>DUSPOL analog 1000 / expert 1000 / digital 1000</b>  <b>The New Generation of Voltage Testers</b></p> <ul style="list-style-type: none"> <li>▲ Voltage measurement from 1 to 1000V AC / 1200V DC</li> <li>▲ TRMS voltage measurement</li> <li>▲ Resistance measurement</li> <li>▲ Diode and acoustic continuity testing</li> <li>▲ Frequency measurement</li> <li>▲ Contactless broken wire detector</li> <li>▲ Power LED for measurement point illumination</li> <li>▲ Rugged IP65 housing with powerful cable strain relief</li> <li>▲ Measuring category: CAT IV 600V / CAT III 1000V</li> </ul>	<p>DUSPOL                      analog 1000                      expert 1000                      digital 1000</p>	<p><b>M611D</b>  <b>M611E</b>  <b>M611F</b></p>
<p><b>MAVOLOGI EXTRA</b>  <b>Quality Analyzer</b></p> <ul style="list-style-type: none"> <li>▲ Evaluation of main quality according EN50160 with automatic report generation</li> <li>▲ IEC 61000-4-30: 2008 Class A power quality analyser</li> <li>▲ 4 voltage and 4 current channels with automatic range selection, 32 kHz sampling rate</li> <li>▲ Measuring of instantaneous values of more than 140 quantities</li> <li>▲ 32 adjustable alarms, anomalies and quality reports which can be saved in the internal memory</li> <li>▲ Frequency range from 16 Hz to 400 Hz</li> <li>▲ RS232/485, Ethernet and USB 2.0 communication ports</li> <li>▲ Modbus and DNP3 communication protocols</li> <li>▲ GPS, IRIG-B (modulated and digital) and NTP real time synchronization</li> <li>▲ Up to 20 inputs and outputs (analogue inputs/outputs, digital inputs/outputs, alarm/watchdog outputs, pulse input/outputs, tariff inputs)</li> <li>▲ Multilingual user interface and user friendly setting- and evaluation software Mavo-View</li> </ul>		



Please ask your distributor for correct configuration





## SECULIFE SAFETY TESTERS



Artikel	Typ	Item number
<p><b>SECULIFE I ST (int.)</b>  <b>Electrical Safety Tester for Medical Equipment</b>  <b>(configurable acc. your needs)</b></p> <p><b>Electrical safety testing:</b></p> <ul style="list-style-type: none"> <li>▲ Electrical medical devices per IEC 62353 and EN 60601 2nd and 3rd edition</li> <li>▲ Electrical equipment per IEC 62638 (draft), VDE 0701-0702</li> <li>▲ Routine tests, e.g. per EN 61010, EN 60950, EN 60335 etc.</li> </ul> <p><b>Measuring options:</b></p> <ul style="list-style-type: none"> <li>▲ Protective conductor resistance with 200 mA, 10A or optionally 25A test current</li> <li>▲ Insulation resistance</li> <li>▲ Earth leakage current</li> <li>▲ Touch current (device leakage current)</li> <li>▲ Patient leakage current, AC and DC</li> <li>▲ Patient auxiliary current</li> <li>▲ Equivalent leakage current procedure</li> <li>▲ Direct measurement</li> <li>▲ Differential current measurement</li> <li>▲ Up to 10 applied parts can be connected (4 mm) and individually assigned to groups</li> <li>▲ Internal memory for 125 tests</li> <li>▲ Automatic detection of protection class</li> </ul>	SECULIFE ST (int.)	M693B
<p><b>SECULIFE I SR</b>  <b>Electrical Safety Tester for Medical Equipment</b></p> <p><b>Electrical safety testing:</b></p> <ul style="list-style-type: none"> <li>▲ Electrical medical devices per IEC 62353</li> <li>▲ Electrical equipment per IEC 62638 (draft), VDE 0701-0702</li> </ul> <p><b>Measuring options:</b></p> <ul style="list-style-type: none"> <li>▲ Protective conductor resistance</li> <li>▲ Insulation resistance</li> <li>▲ Device leakage current</li> <li>▲ Touch current</li> <li>▲ Patient leakage current, AC and DC</li> <li>▲ Equivalent leakage current measurement</li> <li>▲ Direct measurement</li> <li>▲ Differential current measurement</li> <li>▲ USB port</li> <li>▲ Up to 10 applied parts can be connected (4 mm) for remote control and assigned to groups individually (via PC control program)</li> </ul>	SECULIFE SR	—

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SECULIFE FUNCTION TESTERS

Artikel	Typ	Item number
<p><b>Function Testers</b></p> <ul style="list-style-type: none"> <li>▲ Function tests of Defibrillators</li> <li>▲ Infusion pump tester</li> <li>▲ RF surgery generator tester</li> <li>▲ Ventilation Tester</li> </ul>		
<p><b>Patient Simulators</b></p> <ul style="list-style-type: none"> <li>▲ For testing of patient monitors</li> <li>▲ For testing of ECG recorder</li> <li>▲ NIBP, IBP, EKG, temperature, arrhythmia, leakage, respiration</li> <li>▲ SpO2 function (option)</li> <li>▲ Cardiac and fetal/maternal output (option)</li> <li>▲ For 12 lead ECG signal</li> <li>▲ Up to 49 arrhythmia selections</li> <li>▲ 10 AHA &amp; European color coded leads</li> <li>▲ Sine wave, square wave, triangle wave, pulse wave, R-wave (Havertriangle)</li> <li>▲ Remote operation via RS232</li> <li>▲ Auto sequences for BPM, static pressure levels &amp; performance</li> <li>▲ 1 or 2 invasive BP channels</li> </ul>		
<p><b>Light Measurement</b></p> <ul style="list-style-type: none"> <li>▲ Acceptance testing DIN 6868-57/157</li> <li>▲ Constancy testing IEC 61223 / DIN 6868-157</li> <li>▲ Control of ambient lighting conditions</li> <li>▲ Ambient light control IEC / DIN</li> <li>▲ Luxmeter class B and class C versions in accordance with DIN 5032-7</li> <li>▲ High precision luminance meter for contact measurement class B DIN 5032-7, appendix B of IEC 13032-1 and CIE 69</li> <li>▲ Measurement in candelas per square meter (cd/m<sup>2</sup>) or foot-lamberts</li> <li>▲ High precision luminance meter for distance measurement (acceptance angle of 1°)</li> <li>▲ Ambient light control according DIN EN IEC 61223-2-5 and DIN V 6868-57/ 6868-157</li> </ul>		





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