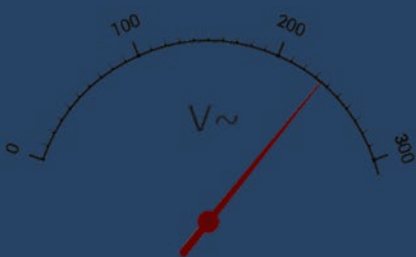
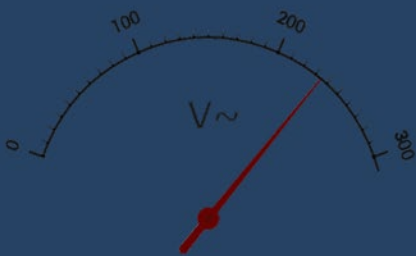


MULTIMETER FOR POWER AND ENERGY MEASUREMENT

HIGH-END DIGITAL MULTIMETER



METRAHIT | **ENERGY**
TRMS POWER | MULTIMETER



Designed for Universal Use
in Electrical Engineering



Multimeters are still the most widely used measuring instruments for applications in the fields of electronics and electrical engineering.

The professional METRAHIT ENERGY power multimeter with PQ analyzer is exceeding all previous performance levels in these areas.

APPLICATIONS

RANGE OF APPLICATIONS

The METRAHIT ENERGY measuring instrument is designed for universal use in electrical engineering, electrical installation, laboratory applications, training, telecommunication etc.

■ Technical laboratories, testing and inspection institutes

The multifunctional METRAHIT ENERGY measuring system is capable of ascertaining instantaneous power consumption as well as energy consumption over a lengthy period of time. And thus one of the most important applications is the measurement of energy balance, e.g. for consumer electronics, communication and IT devices, as well as household appliances such as refrigerators.

■ Power utilities, industrial companies

Disturbances at electrical consumers and power generating equipment can be clarified with the single-phase mains analyzer. Mains disturbances can be acquired and recorded. Voltage dips and swells are recorded along with event time, extreme value and duration if applicable.

■ Industrial companies, manufacturers, distributors

Renowned industrial companies have added the METRAHIT ENERGY to their portfolios as an OEM product for special applications, or adapted to special customer specifications.

FEATURES

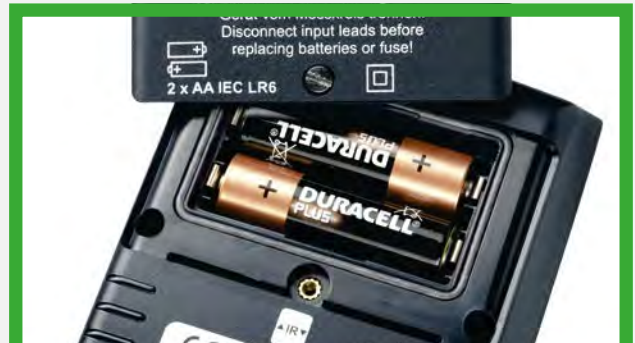
SPECIAL SPECIFICATIONS

- TRMS measurement, bandwidth up to 100 kHz
- Power measurement: active, reactive and apparent power with extreme values, power factor
- Energy measurement: active, reactive and apparent energy, mean power values with adjustable observation period and maximum values
- Power quality analysis: recording of over and undervoltage, dips, swells, voltage peaks and transients in 0, 50 and 60 Hz systems with 6, 60 and 600 V measuring ranges
- Harmonic analysis: RMS values and distortion components up to the 15th harmonic at 16.7, 50, 60 and 400 Hz
- The instrument is fully remote controllable without activating the rotary switch or changing measuring sockets.
- Auto-ranging with peak value monitoring for the prevention of invalid measuring ranges
- High-voltage comparator: prevents switching between the low and high impedance functions when voltage is present
- Crest factor display (up to 1 kHz) in U, I AC + DC display
- All current measuring ranges from 600 μ A to 10 A via a single socket: with auto-ranging and manual range selection
- % duty cycle / pulse duty factor measurement: 2% to 98%
- Acoustic continuity test with adjustable threshold value
- 1 kHz (-3 dB) low-pass filter can be activated, e.g. for measurements at frequency converters
- Active fuse monitoring: blown fuse notification even when no voltage is present
- Internal real-time clock for data storage with reference to time
- Acoustic/optical indication
- Auto power off with adjustable time from 10 to 59 minutes
- Integrated, electrically isolated infrared interface for data exchange with a PC
- Current measurement by means of current clamp transformers with adjustable transformation ratios

UNIQUE



The automatic blocking sockets prevent incorrect connection of the measurement cables, as well as selection of the wrong measured quantity.



Easy replacement of the batteries and the fuse is assured by separate battery and fuse compartments.

TECHNICAL DATA

TECHNICAL DATA	
DC voltage measurement	1 μ V to 600 V
Intrinsic error for V DC	$\pm 0.02\%$ rdg. + 15 d
AC voltage measurement	10 μ V to 600 V
Intrinsic error for V AC	$\pm 0.2\%$ rdg. + 30 d
TRMS V	AC, AC+DC
DC current measurement	10 nA to 10 A
Intrinsic error, DC	$\pm 0.05\%$ rdg. + 20 d
AC current measurement	10 nA to 10 A
Intrinsic error, AC	$\pm 0.5\%$ rdg. + 25 d
TRMS A	AC, AC+DC
Resistance measurement	10 m Ω to 60 M Ω
Intrinsic error, resistance	$\pm 0.1\%$ rdg. + 5 d
Low-resistance measurement	with constant current: I = 3 mA
Power and energy measurement	■
Power quality (PQ)	■
Capacitance measurement	10 pF to 600 μ F
Intrinsic error, capacitance	$\pm 1\%$ rdg. + 6 d
Temperature measurement, Pt100/	-200° to +850°
Thermocouple (type)	-250° to +1372° (J, K)
Continuity test	■
Diode test	6.0 V

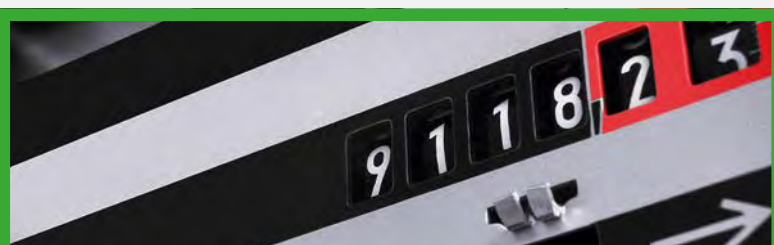
TECHNICAL DATA	
Frequency measurement	0.01 Hz to 1 MHz
Loop resistance measurement	■
DATA / Min-Max storage	■
Data storage (measured values)	16 Mbit (300,000)
Analog display, 35/36 scale graduations	Triple
Digital display (places/digits)	60,000
Display illumination	■
Measurements per second	40 analog / 10 digital
Bandwidth	100 kHz
Interface	IR
Automatic blocking sockets	■
Measuring category	CAT III / 600 V CAT IV / 300 V
Calibration certificate	DAkkS
Weight with batteries	400 g
Batteries / operating hours	2 ea. 1.5 V / 200
Dimensions in mm (W x H x D)	89 x 199 x 43
Protection	IP 52
Approvals and certificates	CE
Accessories / Included	KS29 measurement cable set, rubber holster, DAkkS calibration certificate, batteries



The LCD panel (size 65 x 36 mm) with digital triple display features a background illumination that can be activated, thus creating a clear contrast which facilitates reading, especially in poor lighting conditions.



Traceable evidence and documentation of the technical specification of the device, for example for the monitoring of test equipment in compliance with DIN EN ISO 90000-9004.





ACCESSORIES

ARTICLE	DESCRIPTION	ARTICLE NUMBER
Replacement fuses	Fuses (pack of 10), FF (UR) 10 A / 1000 V AC/DC	Z109L
Accessories for Operation at a PC		
USB-XTRA	Bidirectional IR-USB interface adapter	Z216C
USB-XTRA Set	USB X-TRA interface adapter with METRAWin 10 software	Z216D
METRAWin10	Windows software	GTZ3240000R0001
Temperature Measuring Accessories		
Z3409	Standard Pt100 sensor, class A, for surface and immersion measurements, -40 to +600 °C	GTZ3409000R0001
TF220	Pt1000 temperature sensor, class B, for measurement in gases and liquids, -50 to +220 °C	Z102A
TF550	Pt100 oven sensor, class B, for measurements in ovens, refrigerators etc., -50 to +550 °C	GTZ3408000R0001
TF400CAR	Dip-stick oil temperature sensor, Pt1000, class B, -50 to +500 °C, sensor: 3 mm dia. x 810 mm long	Z102C
TF400 SURFACE	Fast reacting surface temperature sensor (T90 = 2 s), type K thermocouple (NiCr-Ni), -50 to +400 °C	Z102E
Adapters, Power Pack, Charger		
PMA16	Power measuring adapter for METRAHIT ENERGY with earthing contact adapter plug	Z228A
SM16	Current measuring adapter with earthing contact adapter plug	GTM9070190E0002
NA X-TRA	Broad range variable power pack: 90 to 253 V AC / 5 V DC, 600 V CAT IV	Z218G
Pouches and Cases		
HIT BAG	Rugged Cordura belt pouch for METRA HIT and METRAport multimeters	Z115A
HIT BAG+	Large, soft belt pouch for one METRAHIT or METRAport multimeter. Made of rugged, water-repellent Cordura with 3 separate compartments for measurement cables, clips, instructions, CD etc.	Z115B
HC20/HC30	Hard case for one/two METRAHIT multimeter(s) and accessories	Z113A/Z113B
Current Sensors, Current Transformers, Flexible Current Sensors		
CP30	AC/DC current clamp sensor, 0 to 30 A, 0 to 20 A, transformation ratio: 100 mV/A	Z201B
CP330	AC/DC current clamp sensor, 0 to 30 A / 300 A, 0 to 20 / 200 A, 10 mV/A or 1 mV/A	Z202B
CP1100	AC/DC current clamp sensor, 0 to 300 A / 1000 A, to 200 A / 1000 A, transformation ratio: 1 mV/A	Z203B
CP1800	AC/DC current clamp sensor, 0.5 to 125 A, 5 to 1250 A, 10 mV/A, 1 mV/A	Z204A
METRAFLEX 3000	Flexible AC current sensor, measuring range: 30/300/3000 A, transformation ratio: 100 mV / 10 mV / 1 mV/A, 1%, frequency range: 10 Hz to 20 kHz, with battery, sensor length: 61 cm	Z207E
METRAFLEX 300M	Flexible miniature AC current sensor, measuring range: 3/30/300 A, 1000 mV / 100 mV / 10 mV/A, 1%, frequency range: 20 Hz to 100 kHz, with battery, sensor length: 16 cm	Z207M
WZ12A	AC current transformer clamp, 15 to 180 A, 1 mA/A	Z219A
Z3511	AC current transformer clamp, 4 to 500 A, 1 mA/A	GTZ3511000R0001
Z3512	AC current transformer clamp, 0.5 to 1000 A, 1 mA/A	GTZ3512000R0001
Z3514	AC current transformer clamp, 1 to 2000 A, 1 mA/A	GTZ3514000R0001

HIGH PERFORMANCE

All important power factors can be acquired with simultaneous current and voltage measurement. Momentary measured values, for example active power along with the corresponding voltage and current values, as well as alternating voltage frequency or power factors appear at the extended triple display.

With a measuring resolution of 60,000 digits, performance provided by this battery powered, hand-held instrument is comparable to that of a high-end benchtop multimeter.

In particular when acquiring energy consumption for modern devices like smartphones, TV sets, PCs and household appliances such as refrigerators etc., it's important to measure momentary current consumption, and to perform continuous measurement of energy consumption over a longer period of time as well.

Real-time data storage with enough capacity for up to 300,000 measured values allows for measurement as a data logger for the duration of an entire day.

DIVERSE

In addition to other important multimeter functions such as resistance, temperature, capacitance and frequency measurement (for voltage and current), as well as continuity and diode testing, the **METRAHIT ENERGY** also offers measuring functions for crest factor, conductivity, duty cycle, dB and cable length, and even harmonic analysis for voltage and current up to the 15th harmonic.



Measured values for the individual harmonics and THD can be displayed as absolute values (in V or A), as well as relative to the fundamental harmonic (as a percentage).

The instrument's ability to acquire and record mains disturbances is unique amongst handheld multimeters. Voltage dips and swells with durations of greater than ½ period, as well as voltage peaks of longer than 0.5 ms and relative transients with rise times of longer than 0.5 µs, are recorded along with event time, extreme value and duration if applicable. This makes it possible to analyze disturbances at electrical consumers and power generating equipment.

And thus the **METRAHIT ENERGY** provides users with a single-phase power quality measuring instrument (PowerQuality tool) in a handy format.



GMC INSTRUMENTS

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