



RK TECHNOLOGIES

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RK-ME-440

Three-Phase Power & Energy Harmonic Analyzer

◆ POWER QUALITY | HARMONICS to 51st | DATA LOGGER



PRODUCT OVERVIEW

The RK-ME-440 is a professional handheld three-phase Power & Energy Harmonic Analyzer designed for comprehensive power quality measurement on industrial and commercial electrical systems. It simultaneously measures voltage, current, power, energy, and harmonic distortion up to the 51st order across all phases and neutral. With a 16 GB internal data logger recording in CSV format, MODBUS-TCP (RJ45) connectivity, and support for Rogowski coils, CT sensors, and direct voltage inputs — the RK-ME-440 is the ideal tool for energy audits, power quality surveys, billing verification, and harmonic analysis on 3PH4W, 3PH3W, and single-phase systems.



Aluminium Carrying Case (Included)

KEY FEATURES

Measurement & Power Quality	Connectivity & Data Logging
<ul style="list-style-type: none">◆ True RMS voltage & current — all 3 phases + neutral◆ Active, reactive and apparent power — per phase & total◆ Power factor (true & fundamental), phase angles◆ Harmonic analysis up to 51st order — V & I (THD + individual)◆ Voltage & current unbalance measurement◆ Min / Max / Peak demand with timestamp◆ Energy accumulation: active, reactive, apparent (0–999.9 GWh)	<ul style="list-style-type: none">◆ 16 GB internal memory — CSV format log (up to 12 years at 1 min)◆ USB disk download — plug and transfer◆ MODBUS-TCP via RJ45 (default IP 192.168.1.5, port 502)◆ 3.5-inch TFT colour display — clear outdoor visibility◆ 2 × Panasonic 18650 battery — 10 hours runtime◆ 5 V DC external power supply (adaptor included)◆ 8,000 samples/second — 45–65 Hz frequency range



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TECHNICAL SPECIFICATIONS

Parameter	Specification
General	
Model	RK-ME-440
Product Type	Handheld; Poly-phase; Data Logger; Power Analyzer
Wiring Configurations	3PH4W, 3PH3W, 1PH2W (L-N), 1PH2W (L-L), 1PH3W (L-L-N)
Display	3.5-inch TFT colour LCD — 5 adjustable brightness levels
Sampling Rate	8,000 samples per second
Frequency Range	45 – 65 Hz Accuracy: 0.01% (45–65 Hz)
Measurement Accuracy	
Voltage	0.2% (5 V to 600 V direct input)
Current — Rogowski Coil	600 A: $\pm 0.5\%$ (6–720 A) 3000 A: $\pm 0.5\%$ (10–3600 A) 6000 A: $\pm 0.5\%$ (20–7200 A)
Current — CT (333 mV)	Primary: 1 A – 999,999 A Secondary: 0.001 mV – 707 mV
Power Factor	± 0.005
Active / Apparent Power	IEC 62053-22 Class 0.5
Reactive Power	IEC 62053-21 Class 2
Active Energy	IEC 62053-22 Class 0.5s
Current Input	
Connector Type	4 × BNC terminals (333 mV CT / Rogowski coil / 320 mV current clamp)
Rogowski Coil Ranges	600 A (MRC-36) 3000 A (NRC-150 / Y-FCT-510) 6000 A (NRC-200 / Y-FCT-800)
Measurement Input Range	1/225 mV – 707 mV Permissible overload: 2 V for 10 s
Harmonic Analysis	
Harmonic Order	2nd to 51st (simultaneously) — per phase voltage and current
THD	Total harmonic distortion for voltage (UTHD) and current (ITHD) — percentage and RMS value
Display Harmonics	5 selectable harmonic orders visible simultaneously (H1–H5, range 2–51)
Energy & Demand	
Active Energy	0 to 999.9 GWh (auto reset at limit)
Reactive Energy	0 to 999.9 GVARh (auto reset at limit)
Apparent Energy	0 to 999.9 GVAh (auto reset at limit)
Demand Method	Fixed block or sliding block Interval: 1–60 minutes (default: sliding, 15 min)
Peak Demand	Stored in non-volatile memory with date/time timestamp; resettable
Data Logging	



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Storage	16 GB internal memory USB disk download
Record Format	CSV (3 files: DataSheet, Voltage Harmonic, Current Harmonic)
Record Interval	1 s – 99,999 s (default: 60 s) Capacity: ~12 years at 1-minute interval
Logged Parameters	V, UTHD, I, ITHD, f, PF, demand, peak demand, active/reactive/apparent power & energy (per phase + total)
Communication & Connectivity	
Protocol	MODBUS-TCP over RJ45 Default IP: 192.168.1.5 Port: 502
USB	USB disk port for direct data download
Power Supply & Physical	
Battery	2 × 2900 mAh Panasonic 18650 Li-ion Runtime: ~10 hours Charge time: ~8 hours
External Power	5 V DC (85–265 V AC adaptor included)
Dimensions	215 × 130 × 60 mm
Weight	850 g (main unit) ~2 kg with accessories
IP Protection	IP20 (IEC 60629)
Overvoltage Category	Category III — distribution systems up to 277/480 V AC
Environmental	
Operating Temperature	-25°C to +55°C
Storage Temperature	-40°C to +85°C
Humidity	5 – 95% RH at 50°C (non-condensing)
Altitude	3000 m maximum
Warranty	12 months
Standards Compliance	
Standards	EN 62052-11, EN 61557-12, EN 62053-21/22/23, EN 50470-1/3, EN 61010-1/2/031, EN 55022 Class B, IEC 61000-4-2/3/4/5/6/8

STANDARD PACKING LIST

Item	Qty	Remarks
Main Unit — RK-ME-440 Handheld Power & Harmonic Analyzer	1 pc	
Rogowski Coil Current Sensors (Flexible)	4 pcs	Phase A, B, C + N
Voltage Input Lead Wires (Banana plug, 2 m)	5 pcs	A, B, C, N, PE
AC–DC Power Adaptor	1 pc	85–265 V AC → 5 V DC
Aluminium Carrying Case	1 pc	Foam-lined
User Manual	1 pc	English

Note: Rogowski coil is included in the standard package. Optional accessories: ST08 clamp sensor (5 A / 10 A), 333 mV CT adaptors.



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TYPICAL APPLICATIONS

Energy Audit	Power Quality	Maintenance & Billing
<ul style="list-style-type: none">Industrial energy consumption auditkWh / kVAh billing verificationLoad profiling and demand recordingEnergy efficiency reporting	<ul style="list-style-type: none">Harmonic distortion survey (up to 51st)Power factor correction studyVoltage & current unbalance checkGenerator / UPS power quality	<ul style="list-style-type: none">Transformer & panel board testingCommissioning of VFDs and invertersUtility metering cross-checkPredictive maintenance logging

ORDERING INFORMATION

Model Code	Description
RK-ME-440	Handheld 3-Phase Power & Harmonic Analyzer — includes Rogowski coils, voltage leads, adaptor, carrying case
Optional: ST08-5A Clamp	5 A / 10 A clamp current sensor (333 mV output) for low-current circuits
Optional: NRC-150 Rogowski	3000 A rated Rogowski coil for high-current applications
Optional: NRC-200 Rogowski	6000 A rated Rogowski coil for very high-current applications

Contact RK Technologies for Pricing, Demo & Technical Support

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