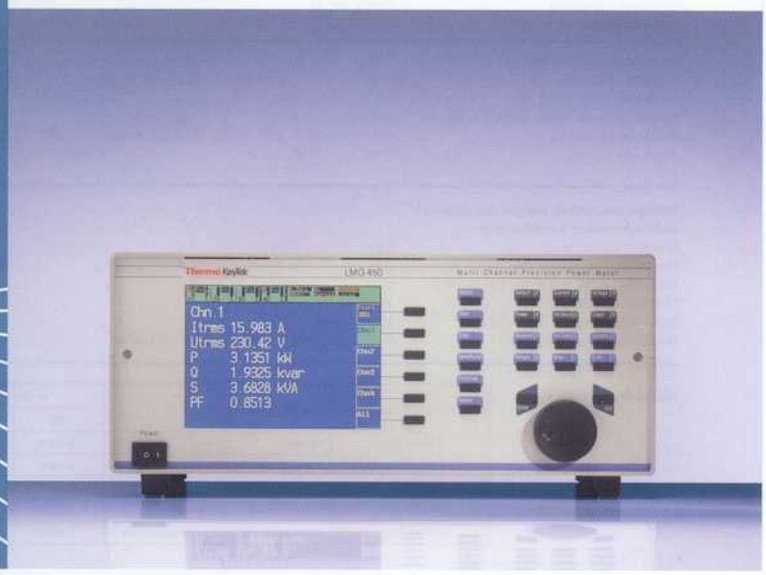
LMG450

4-Channel Precision Power Analyzer



The Thermo KeyTek LMG450 power meter is a highly advanced precision power analyzer. Tried, tested and accepted in the market. It is designed as a 4-channel, universal analyzer to cover the entire field of power electronics and network analysis. The LMG450 can be used in virtually in all power electronics applications, in development and test systems, quality assurance and maintenance. It is fully frequency inverter-compatible.

Every lab needs a Thermo KeyTek power analyzer to efficiently view, document, and export the collected power related information. The human, process, and machine interfaces have been optimized to the fullest to ensure accurate data has been captured without any gaps or deviation.

FEATURES

- Accuracy - 0.1 Hz - 20kHz, 0.1%
- Bandwidth – DC, 0.1 Hz - 20 kHz
- Fully isolated measuring inputs to 600V between inputs or ground. Direct measurement ranges up to 600V (1600V peak) and 20A (960A peak for the measurement of inrush currents)
- Current clamps and transducers are available ranging from 1,2A – 1000A as part of the standard product line
- Optional RS-232 and IEEE488.2 ports for data output or remote control. PCMCIA memory card or 3.5" floppy disk drive options available
- Parallel printer interface port for direct printout of graphs, tables, etc. without the need of a PC
- Desktop (standard), carrying handle or rack mount option available
- Designed per EN61000-4-7 for pre-compliance harmonics measurements to EN61000-3-2
  Designed per EN 61000-4-15 compliance flicker measurements to EN61000-3-3
- CE-Marked for export

BENEFITS

- A color graphics LCD display enhances the presentation of diagrams, waveforms, and plots of all four channels
- All four channels can be viewed individually, simultaneously, or superimposed over one another to give a real time view of the relation of each signal to one another
- Intuitive operation by the use of hotkeys for direct menu access
- Current, voltage, and power harmonics analysis up to the 99th harmonic, ranging from 0.1Hz to 1kHz
- Menu selectable signal coupling, synchronization source, and trigger source
- User defined setup menus can be stored and recalled when needed
- Internal low pass filters, switchable into the signal path of voltage and current to ensure viewing of desired signal as standard
- Measuring ranges are auto, manual, or remote controlled
- TRMS values are measured on all measurements to ensure accurate readings are obtained on non-sinusoidal and/or DC component contained waveforms

Technical DataVoltage measuring ranges

Nominal value /V	6	12.5	25	60	130	250	400	600
Maximum trms value /V	7.2	14.4	30	60	130	270	560	720
Maximum peak value for full scale /V	12.5	25	50	100	200	400	800	1600
Overload capability	1500V for 1s							
Input impedance	1MΩ, 20pF							

Current measuring ranges

Nominal value /A	0.6	1.2	2.5	5	10	16
Maximum trms value /A	1.3	2.6	5.2	10	18	18
Maximum peak value for full scale /A	1.875	3.75	7.5	15	30	60
Overload capability	18A permanent, 50A for 1s, 150A for 20ms					
Input impedance	2mΩ					

Voltage measuring ranges for external isolated current transduceers

Nominal value /V	0.12	0.25	0.5	1	2	4
Maximum trms value /V	0.15	0.3	0.6	1.2	2.5	5
Maximum peak value for full scale /V	0.25	0.5	1	2	4	8
Overload capability	250V for 1s					
Input impedance	100kΩ, 10pF					
Measuring range selection	Automatic, manual or remotely controlled					

Measuring accuracy

45...65Hz, AC-Coupling	Measuring accuracy	± (% of measuring value + % of measuring range)			
		DC	1Hz..1kHz	1kHz..5kHz	5kHz...20kHz
0.05+0.05	Voltage	0.2+0.2	0.1+0.1	0.2+0.2	0.3+0.4
0.05+0.05	Current (direct)	0.4+0.4	0.15+0.1	0.2+0.2	0.5+0.5
0.07+0.08	Active power (direct)	0.5+0.5	0.2+0.1	0.3+0.2	0.6+0.5
0.05+0.05	Current (via ext. current transducer)	0.2+0.2	0.1+0.1	0.2+0.2	0.3+0.4
0.07+0.08	Active power (via ext. current transducer)	0.3+0.3	0.15+0.1	0.3+0.2	0.6+0.5

Accuracies based on:

1. sinusoidal voltage and current
2. ambient temperature 23 °C
3. warm up time 1h
4. definition of power range as the product of current and voltage range, $0 \leq PF \leq 1$, (PF=Power factor=P/S)
5. calibration interval 12 month

Other values: All other values are derived from the current, voltage and active power values. Accuracies for derived values depend on the functional relationship (e.g. $S = I * U$, $\Delta S/S = \Delta I/I + \Delta U/U$)

Analysis window: Adjustable window for calculation and analysis of single or non periodic signals . Window adjustable over full memory range

Synchronization: The measurement is synchronized on the signals period. There is a choice to determine the period from u(t), i(t), p(t), further u2(t), i2(t) by using a settable filter . By this very stable readings are achieved, even at signals of pulse width modulated frequency inverter and amplitude modulated electronic ballast.

Harmonic analysis prCE Harm: Measuring of current and voltage with evaluation according to EN61000-3-2 (Pre-compliance)

Harmonic analysis Harm100: Analysis of current, voltage and power up to 99th harmonics (max. 10kHz), in total 100 harmonics, when including DC part. Fundamental in the range from 0.1Hz to 1kHz. By selectable integer divider (1...128) a new reference fundamental can be created as to detect interharmonics.

Flicker measuring: Flicker Meter according to EN61000-4-15 with evaluation according to EN61000-3-3

Scope function: Graphical representation of sampled values over the time

Plot function: Time diagram of max. 4 readings, minimal resolution 50ms

Computer interfaces: Interfaces: RS232 and IEEE488.2, only one interface can be used at the same time
Remote control: All functions can be remote controlled, keyboard lock for measuring parameters available
Output data: Output of all readable data, data formats equal for all interface types, SCPI command set
Transfer rate: RS232: max.115200 Baud, IEEE488.2: max. 1MByte/sec

Printer interface: Parallel PC-Printer interface with 25-pin SUB-D socket for printing measuring values, tables, graphics to matrix, inkjet or laser printers

Other data

Dimensions	- Bench case, W 320mm x H 147mm x D 307mm - 19''- chassis, 84PU, 3HU, D 307mm
Weight	about 6.5kg
Protection system	IP20 in accordance to DIN40050
Operating/storage temperature	0...40°C, -20...50°C
Climatic class	KYG in accordance to DIN40040
Power supply	85...264V, 47...440Hz, about 45W

Thermo KeyTek is the pioneer and global leader in EMC test technology, and offers a family of testers to meet the broad range of test requirements and budgets for organizations worldwide. This includes EMC immunity standards such as those required for CE Mark compliance, as well as those mandated by market- and company-driven quality programs.

Please inquire about these products, as well as other Thermo KeyTek engineering and support services available to help you achieve your EMC test objectives.

For more information on our products and services, please visit our web site at: www.thermokeytek.com

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