The precision power meter LMG95e is the economic version of the proven LMG95. Available in a fixed configuration, it is the entry-level model of the LMG product family and balances price, accuracy and features.
Voltage measuring ranges
Rated range value /V
6  12.5  25  50  100  200  400  600
Permissible rms value /V
7.2 12.5  25  50  100  200  400  600
Permissible peak value for full scale /V
12.5  25  50  100  200  400  800  1600

Overload capability
1500V for 1s
Input resistance
1MΩ, 20pF

Current measuring ranges
Rated range value /A
0.15  0.3  0.6  1.2  2.5  5  10  20
Permissible rms value /A
0.3  0.6  1.3  2.6  5.2  10  21  21
Permissible peak value for full scale /A
0.469  0.938  1.875  3.75  15  30  60

Input resistance
5mΩ

Voltage inputs for current measuring with shunt / transducer
Rated range value /V
0.03  0.06  0.12  0.25  0.5  1  2  4
Permissible rms value /V
0.06  0.13  0.27  0.54  1  2  4  8

Overload capability
250V for 1s
Input resistance
100Ω

Isolation
Current and voltage path are isolated against each other and may float against earth with 1000V/CAF III

Measuring method
Simultaneous sampling of the current and voltage signals and A/D conversion of the instantaneous values (100kHz)

Measuring cycle, synchronization, averaging
For measurements of the trms values for current, voltage and active power the measuring cycle time is adjustable in the range of 50ms to 60s. In each measuring cycle gapless 100kHz sampling and evaluation. The synchronization can be performed on the measuring signal, the fundamental harmonic, the envelope or the mains. Average from 1 to 1000 cycles.

Measuring uncertainty

<table>
<thead>
<tr>
<th>Measuring uncertainty</th>
<th>± (% of reading + % of range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>DC, 0.05Hz...3kHz 3...15Hz 15...50kHz</td>
</tr>
<tr>
<td>Current</td>
<td>0.03+0.08  0.1+0.2  0.5+1.0</td>
</tr>
<tr>
<td>Shunt Voltage Input</td>
<td>0.03+0.08  0.1+0.2  0.5+1.0</td>
</tr>
<tr>
<td>Active Power</td>
<td>0.05+0.12  0.2+0.2  1.0+1.0</td>
</tr>
</tbody>
</table>

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

Internal time base
±100ppm

Frequency measuring
0.05Hz...50kHz ± 0.01% of measuring value, measuring channel selectable

Display of measured and computed values

Representation
With standard abbreviation of measured magnitudes, numeral values 6 digits (0...999999), with sign, decimal point and unit (e.g. 1.23456Ω)

Voltage, current, power
Trms value, peak values (min, max, pp), rectified value (rect), mean value (dc), trms value of ac component (ac), form factor, crest factor, phase angle (ϕ), power factor (λ)

Impedance
Active power (P), reactive power (Q), apparent power (S), phase angle (ϕ), power factor (λ)

Integrated values depending on the measuring time
Energy, charge
Active energy (Ep), reactive energy (Eq), apparent energy (Es), charge (q)

Date and time, measuring time
Current date (day, month, year) with time (hour, minutes, seconds), accu buffered real time clock, start time for measurement, running measuring time, on-time, each with days, hours, minutes, seconds

Adjustable parameters
Scaling factors for external shunt, current and voltage transducer

Synchronization
Synchronization is made on the periodicity of the measured signal. Periodicity can be determined by the signals u(t), i(t), p(t), u²(t), i²(t), each of them can be adapted with selectable filters. By this stable displays also with pulse width modulated signals (e.g. frequency inverter) and amplitude modulated signals (e.g. electronic ballast). Synchronization also on mains.

Scope function
Graphical representation of sampled values (waveform of the signal)

Plot function
Time diagram of calculated values, e.g. trms value and power

Harmonic analysis CE-Hrm
Analysis of current and voltage up to the 40th harmonic (total of 41 with DC component), fundamental in the range 45Hz to 65Hz. Analyzer in accordance with EN61000-4-7 with evaluation in accordance with EN61000-3-2 (pre compliance)

Computer interface
Interfaces: RS232 and IEEE488.2, only one interface can be used at the same time

Remote control
All functions can be remote controlled

Output data
Output of all displayable data possible, data formats of all interfaces are the same, SCPI command set

Transfer rates
RS232: max. 115200 Baud, IEEE488.2: max. 1MByte/sec

Printer interface
Parallel PC-printer interface with 25 pin SUB-D socket for printing of values, tables and graphics on needle, ink or laser printer

Other data
Service RS232 interface
For firmware update and service diagnostics

Auxiliary power supply output
+15V/0.4A and -15V/0.2A for external current transducers

Dimensions/weight
Desktop case, (w)320mm x (h)147mm x (d)274mm, subrack 84PU, 3HU, (d)274mm, about 5.5kg

Safety regulation
EN61010-1, protection class I, overvoltage class III

Electromagnetic compatibility
EN61326-1, EN61000-3-2, EN61000-3-3

Protection class
IP20 acc. to EN60529

Operation temperature, storage temperature
5...40°C, 20...60°C

Supply
90...200V, 45...65Hz, about 30W

Subject to technical changes, especially to improve the product, at any time without prior notification.