

PROVA 23

Power Harmonics and Leakage Tester

CE
IEC
61010

CAT II
600V

CAT III
300V



Features:

1. **Active** (W, KW, HP), **Reactive** (VAR, KVAR) and **Apparent** (VA, KVA) power.
2. **Power factor** (PF), **Phase angle** (Φ), and **Energy** (mWH, WH, KWH).
3. Measurement of **standby power consumption** for IT products.
4. Non-interrupted **AC current harmonic** analysis.
5. **1 to 99th order** of Harmonics (V and A).
6. **Total harmonic distortion** (%THD-F) and **Crest factor** (CF).
7. True RMS measurement of **AC V (600V)** and **AC A (100A)** at **0.5%** basic accuracy.
8. **Fast peak** function (39 μ s for 50 Hz, 33 μ s for 60Hz).
9. Measurement of balanced **3 Φ power**.
10. Measurement of balanced **3 Φ sequence**.
11. Programmable **CT ratio** from 1 to 250.
12. **Max, Min** and data **Hold** functions.
13. **Leakage current** measurement at 10 μ A resolution.
14. Active power in **H.P.**
15. **Auto power off** function in 30 minutes.

Electrical Specifications: (23°C±5°C, Accuracy is % of reading)

AC Watt

(50 or 60 Hz, PF 0.6~1, CT=1, Voltage > AC 4V, Current > AC 1mA for mA range, Current > AC 0.04A for A range. Specification applies to continuous waveforms.)

Range (0 to 60A)	Resolution	Accuracy of Readings
0.050 – 9.999 W	0.001W	±2% ± 0.025W
10.00 – 99.99 W	0.01W	±2% ± 0.25W
100.0 - 999.9 W	0.1W	±2% ± 2.5W
1.000 – 9.999 KW	0.001 KW	±2% ± 0.025KW
10.00 – 99.99 KW	0.01 KW	±2% ± 0.25KW
100.0 – 999.9 KW	0.1 KW	±2% ± 2.5KW
1000 – 9999 KW	1 KW	±2% ± 25KW

Range (60 – 100A)	Resolution	Accuracy
0.050 – 9.999 W	0.001W	±2% of VA ± 5dgts
10.00 – 99.99 W	0.01W	
100.0 - 999.9 W	0.1W	
1.000 – 9.999 KW	0.001 KW	
10.00 – 99.99 KW	0.01 KW	
100.0 – 999.9 KW	0.1 KW	
1000 – 9999 KW	1 KW	

AC Current

(Auto Range, True RMS, Crest Factor<4, CT=1, Max. peak values 880mA DC for mA range, 73.5A DC for A range, Overload Protection AC 600A)

Range	Resolution	Accuracy of Readings (50/60Hz)
0.5 – 60mA	0.01mA	±0.5% ± 5dgts
60 – 100mA	0.01mA	±0.5% ± 50dgts
100 – 600 mA	0.1 mA	±0.5% ± 5dgts
0.05 – 3 A	0.001 A	
3 – 30 A	0.01 A	
30 – 90 A	0.01 A	±1.0% ± 5dgts

Range	Resolution	Accuracy of Readings (45-1KHz)
0.5 – 60mA	0.01mA	±1.5% ± 5dgts
60 – 100mA	0.01mA	±1.5% ± 50dgts
100 – 600 mA	0.1 mA	±1.5% ± 5dgts
0.05 – 3 A	0.001 A	
3 – 30 A	0.01 A	
30 – 90 A	0.01 A	

AC Voltage

(Auto Range, True RMS, Crest Factor<4, Input Impedance 10 MΩ, Max. peak value 860V DC, Overload Protection AC 800V)

Range	Resolution	Accuracy of Readings (50/60Hz)
5V – 250 V	0.1 V	±0.5% ± 5dgts
250 V – 600 V		

Range	Resolution	Accuracy of Readings (45-1KHz)
5V – 250 V	0.1 V	±1.5% ± 5dgts
250 V – 600 V		

Harmonics of AC Voltage in Percentage

(1 to 99th order, min. voltage at 50 or 60 Hz is > AC 80V. If the voltage is 0 at 50 or 60 Hz, all the percentage (%) display is 0.)

Range	Resolution	Accuracy
1 – 10 th	0.1 %	±0.7% of reading ±1%
11 – 20 th		±2% of reading ±1%
21 – 50 th (A range)		±5% of reading ±1%
21 – 50 th (mA range)		±10% of reading ±1%
51 - 99 th		±35% of reading ±1%

Harmonics of AC Voltage in Magnitude

(1 to 99th order, min. voltage at 50 or 60 Hz is > AC 80V.)

Range	Resolution	Accuracy
1 – 10 th	0.1 V	±0.7% of reading ±7dgts
11 – 20 th		±2% of reading ±7dgts
21 – 50 th (A range)		±5% of reading ±7dgts
21 – 50 th (mA range)		±10% of reading ±7dgts
51 - 99 th		±35% of reading ±7dgts

Harmonics of AC Current in Percentage

(1 to 99th order, min. current at 50 or 60 Hz is > 100mA for mA range, and > 1A for A range. If the current is 0 at 50 or 60 Hz, all the percentage (%) display is 0.)

Range	Resolution	Accuracy
1 – 10 th	0.1 %	±0.7% of reading ±1%
11 – 20 th		±2% of reading ±1%
21 – 50 th (A range)		±5% of reading ±1%
21 – 50 th (mA range)		±10% of reading ±1%
51 - 99 th		±35% of reading ±1%

Harmonics of AC Current in Magnitude

(1 to 99th order, min. current at 50 or 60 Hz is > 100mA for mA range, and > 1A for A range.)

Range	Resolution	Accuracy
1 – 10 th	0.01mA / 0.1mA / 0.001A / 0.01A	reading in mA: ±1% of reading ±2mA reading in A: ±1% of reading ±0.3A
11 – 20 th		reading in mA: ±7% of reading ±2mA reading in A: ±7% of reading ±0.3A
21 – 50 th		reading in mA: ±15% of reading ±3mA reading in A: ±15% of reading ±0.3A
51 - 99 th		reading in mA: ±35% of reading ±3mA reading in A: ±35% of reading ±0.3A

Power Factor (PF, ACV > 4V, AC mA > 1mA, AC A > 0.04A, Watt > 50 digits)

Range	Resolution	Accuracy
0.000 – 1.000	0.001	±0.04

Phase Angle (Φ , 50 or 60Hz)

Range	Resolution	Accuracy
-180° to 180°	0.1°	± 2°
0° to 360°		

Frequency (Hz)

Range	Resolution	Accuracy of Readings	Allowed Input
mA (45 – 65Hz)	0.1Hz	± 0.5Hz	20mA to 1.2A
A (45 – 65Hz)			1A to 100A

Sensitivity: > 20mA for mA range, > 3A for A range, and > 50V

Total Harmonic Distortion (THD-F with respect to the first (fundamental) harmonics, min. value in the range from 45 to 65Hz is > AC 80V, > 1A for A range, and > 100mA for mA range. Calculation is done over 1 to 50th Harmonics. If the voltage or current is 0 in the range from 45 to 65Hz, all the percentage (%) display is 0.)

Range (45~65Hz)	Resolution	Accuracy
0.0 – 20.0 %	0.1%	± 2%
20.0 – 100%		±3% of reading ± 5%
100 – 999.9%		±10% of reading ±10%


Peak Value of AC Periodic Voltage (peak value > 10V) **or AC Periodic Current** (peak value > 10mA for mA range and peak value > 0.5A for A range) **for continuous waveform except for square wave:**

Range	Sampling Time	Accuracy of Reading
50 Hz	39 μ s	± 5% ± 30 digits
60 Hz	33 μ s	

Crest Factor (C.F.) of AC Voltage (peak value > 10V) **or AC Current** (peak value > 10mA for mA range and peak value > 0.5A for A range) **for continuous waveform except for square wave:**

Range (45~65Hz)	Resolution	Accuracy of Readings
1.00 – 99.99	0.01	± 5% ± 30 digits

General Specifications:

Conductor Size:	30mm (approx.)
Battery Type:	two 1.5V (AA) SUM-3
Display:	4+2+2 digits LCD
Range Selection:	Auto
Overload Indication:	OL
Power Consumption:	10 mA (approx.)
Low battery Indication:	
Auto-Power-Off:	30 minutes after power-on
Update Time:	2 times/second (display)
No. Of Samples per Period	512 (voltage or current) 256 (power)
Temperature Coefficient (< 18°C or > 28°C):	0.15 x (Specified Accuracy) / °C
Operating Temperature:	-10°C to 50°C
Operating Humidity:	less than 85% relative
Altitude:	up to 2000M
Storage Temperature:	-20°C to 60°C
Storage Humidity:	less than 75% relative
Dimension:	210mm (L) x 62mm (W) x 35.6mm (H) 8.3" (L) x 2.5" (W) x 1.4" (H)
Weight:	200g (battery included)
Accessories:	Test leads x 1 pair Carrying bag x 1 Users manual x 1 Batteries 1.5V x 2
Option:	Alligator clips

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