

# Model 21/23 Power Harmonics and Leakage Tester

## Model 19 Harmonics and Leakage Tester



### FEATURES

#### MODEL PROVA 19, 21, 23

#### Model 21(50A) and 23(100A)

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|--|----------------------------|
| True RMS value (V and A)                         | W, KW, H.P.                |
| Leakage Current                                  | VA, KVA, VAR,              |
| Measurement at 10 $\mu$ A Resolution             | KVAR                       |
| Harmonic Analysis (V and A) to the 99 th Order   | PF, Phase Angle ( $\Phi$ ) |
| Better Understanding of                          | Energy (mWH, WH,           |
| High Frequency Harmonic Analysis (up to 5/6 KHz) | KWH)                       |
| Non-interrupted Harmonic Analysis                | Analysis of Standby        |
| Analysis of Total Harmonic Distortion (THD-F)    | Power Consumption          |
| Analysis of Crest Factor (C.F.)                  | Balanced 3 $\Phi$ Power    |
| Fast Peak Function (33 $\mu$ s and 39 $\mu$ s)   | Quality                    |
| Programmable CT Ratio (1 to 250)                 | Balanced 3 $\Phi$ Sequence |



### SPECIFICATION

Please refer to users manual for more detailed and up-to-date description of specification.

AC Watt (50 or 60 Hz, PF 0.5 to 1. CT = 1, Accuracy of Readings)

Model 21 (0 to 50A), Model 23 (0 to 100A)

Range	Resolution	Accuracy 21 (0 - 30A)	Accuracy 21 (30 - 50A)
		Accuracy 23 (0 - 60A)	Accuracy 23 (60 - 100A)
0.000 – 9.999 W	0.001 W	$\pm 1\% \pm 0.02$ W	$\pm 2\%$ of VA $\pm 5$ dgts

10.00 – 99.99 W	0.01 W	±1% ± 0.2 W	±2% of VA ± 5dgts
100.0 – 999.9 W	0.1 W	±1% ± 0.2 W	±2% of VA ± 5dgts
1.000 – 9.999 KW	0.001 KW	±1% ± 0.02 KW	±2% of VA ± 5dgts
10.00 – 99.99 KW	0.01 KW	±1% ± 0.2 KW	±2% of VA ± 5dgts
100.0 – 999.9 KW	0.1 KW	±1% ± 0.2 KW	±2% of VA ± 5dgts
1000 – 9999 KW	1 KW	±1% ± 2 KW	±2% of VA ± 5dgts

AC Current (50 or 60 Hz, True RMS)

Range (Model 19,21)	Range (Model 23)	Resolution	Accuracy of Readings
0.30 – 60.00mA	0.30 – 60.00mA	0.01mA	±0.5% ± 5dgts
60.0 – 600.0mA	60.0 – 600.0mA	0.1mA	±0.5% ± 5dgts
0.030 – 3.000 A	0.030 – 9.999 A	0.001 A	±0.5% ± 5dgts
3.00 – 30.00 A	10.00 – 60.00 A	0.01 A	±0.5% ± 5dgts
30.00 – 50.00 A	6 0.00 – 99.99 A	0.01 A	±1.0% ± 5dgts

AC Voltage (50 or 60 Hz, True RMS)

Range	Resolution	Accuracy of R.	Range	Resolution	Accuracy of R.
3V – 250V	0.1 V	±0.5% ± 5dgts	250V – 600V	0.1 V	±0.5% ± 5dgts

Harmonics of AC Voltage in % and Magnitude (1 to 99th order)

Range	Resolution	Accuracy in %	Resolution	Accuracy in Magnitude
50V – 600V	0.1 %	±0.5%	0.1 V	±0.5% ± 0.5V

Harmonics of ACA in % Percentage and Magnitude (1 to 99th order)

Range (Model 19, 21)	Range (Model 23)	Res.	Accuracy (%)	Res.	Accuracy of R.
10.00 – 60.00mA	10.00 – 60.00mA	0.1 %	±0.5%	0.01mA	±0.5% ± 0.1mA
60.0 – 600.0mA	60.0 – 600.0mA	0.1 %	±0.5%	0.1mA	±0.5% ± 1mA
0.5 – 3.000 A	0.5 – 9.999 A	0.1 %	±0.5%	0.001 A	±0.5% ± 0.01 A
3.00 – 30.00 A	10.00 – 60.00 A	0.1 %	±0.5%	0.01 A	±0.5% ± 0.1 A
30.00 – 60.00 A	6 0.00 – 99.99 A	0.1 %	±1.0%	0.01 A	±1.0% ± 0.1 A

Power Factor and Phase Angle (PF,  $\Phi$ , Model 21 and 23)

Range (PF)	Resolution	Accuracy	Range ( $\Phi$ )	Resolution	Accuracy
0.000 – 1.000	0.001	± 1°	-180° to 180° (0° to	0.1°	± 1°

			360 ° )		
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Total Harmonic Distortion (THD-F, 1 to 99th order) Crest Factor (C.F., Accuracy of Readings)

Range	Resolution	Accuracy of R.	Range	Resolution	Accuracy of R.
0.0 – 999.9 %	0.1%	± 0.5% ± 5 digits	1.00 – 99.99	0.01	± 5% ± 30 digits

#### General Specification

<b>Conductor Size</b>	30mm (approx.)
<b>Battery Type</b>	1.5V SUM-3 x 2
<b>Display</b>	4+2+2 digits LCD
<b>Power Consumption</b>	5mA (approx.)
<b>Auto-Power-Off</b>	30 minutes
<b>No. Of Samples/Period</b>	512 (V & A), 256 (W)
<b>LCD update rate</b>	2 times / sec.
<b>Weight</b>	200g (battery included)
<b>Operating Temperature</b>	-10 ° C to 50° C
<b>Operating Humidity</b>	< 85% relative
<b>Storage Temperature</b>	-20° C to 60° C
<b>Storage Humidity</b>	: < 75% relative
<b>Dimension</b>	210 (L) x 62 (W) x 35.6mm (H), 8.3" (L) x 2.5" (W) x 1.4" (H)
<b>Accessories</b>	test leads, Carrying bag x 1, Users manual x 1, Batteries 1.5V x 2
<b>Option</b>	alligator clips