



MECO supports
Bureau
of Energy Efficiency
(BEE), Govt. of
India's mission
to institutionalize
certification of
Electric / Electronic
goods for ECOMARK
under
Gazette of India

PHA 5850



Are you aware of BEE's PAT Scheme (Perform, Achieves & Trade) to improve Energy Efficiency of Equipments for Eight Industrial Sectors ? It is mandated to compulsorily improve Energy Efficiency of old equipments by replacement or adopting all available measures.

Electricity Act 2003 : Energy Audit must for HT Consumers

Does Energy Conservation in your Electrical installation generates Harmonic ?

MECO has an easy and affordable solution to locate, measure, record & analyse quality of power in electrical system.

MECO Power and Harmonics Analyser Model PHA-5850 can Analyze, Measure, Monitor & Data Log values of Power Quality & Consumption (Energy). Capable of analyzing IT standby power consumption to the maximum demand of factory. It comes with a user friendly application software that increases the utility & performance of this instrument. The analyzer is ideal for an any Engineer / Inspector for carrying out Periodic Visits, Maintenance of Plant, Vigilance checks, Surveys and Energy Audits for checking at Industrial and Consumers end.

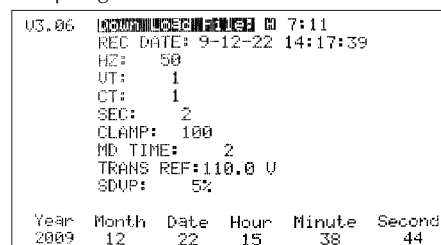
Features:

- Analysis of 3P4W, 3P3W, 1P2W, 1P3W Systems
- Display of 35 Parameters in one screen
- Programmable CT (1 to 600) and PT (1 to 3000) Ratios
- Graphic Phasor Diagram
- RMS, PEAK Value & Crest Factor
- Calculated Unbalanced Current through Neutral line
- True RMS value, Active Power, Apparent & Reactive Power (KVA, KVAR)
- Power Factor, Phase Angle (Φ) & Energy (WH, KWH, KVARH, PFH)
- Average / Maximum Demand (KW, MW, KVA, MVA) with Programmable Period
- Display of 50 Harmonics in one Screen with Wave form with Peak value (1024 Sample / Period)
- Analysis of total Harmonic Distortion (THD-F)
- Capture 28 Transient Events with Programmable Threshold (%) (DIP, SWELL & OUTAGE)
- Built in timer & Calender for Data Logging
- Facility to retrieve Power Data & Harmonics on Meter Screen
- 512K Memory with Programmable Interval (2 to 3000 seconds, 17000 records for 3P4W System)
- Optical Isolated RS-232C ~ USB Interface
- Software for easy download of Recorded Data & Transient events
- Zooming of Wave form on PC

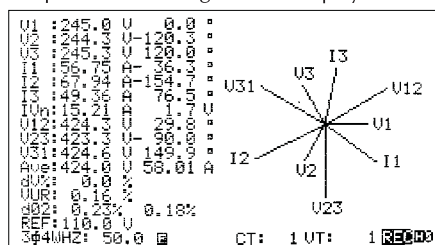


Display Screens

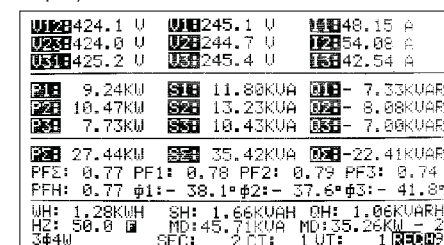
Setup Page



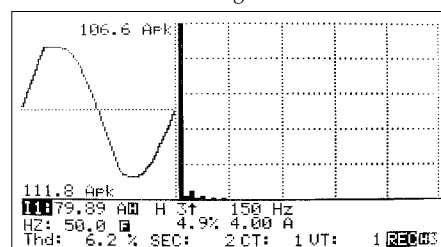
Graphic Phasor Diagram with 3 ϕ System



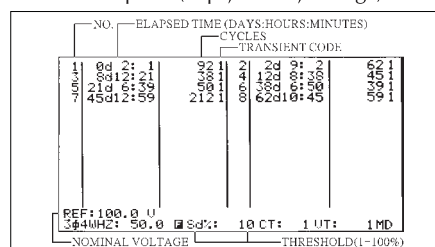
Display of 35 Parameters in One Screen



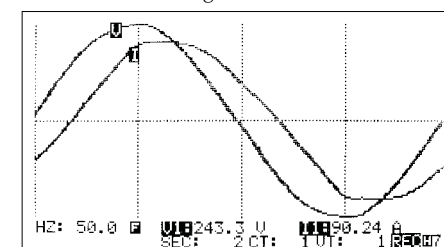
50 Harmonics of Voltage & Current



Transient Capture (Dips, Swells, Outage)



Waveform of Voltage & Current



Specifications : (23°C ± 5°C)

AC Current

(50Hz or 60Hz, Auto Range, True RMS, Crest Factor < 4, CT = 1)

Model : PHA-5850A (100A) (Overload Protection AC 200A)

Range	Resolution	Accuracy of Readings
0.04 - 1A	0.1mA / 1mA	± 0.5% ± 0.05A
0.4 - 10A	0.001A / 0.01A	± 0.5% ± 0.05A
4 - 100A	0.01A / 0.1A	± 1.0% ± 0.5A

Model : PHA-5850B (1000A) (Overload Protection AC 2000A)

Range	Resolution	Accuracy of Readings
10.00A	0.001A / 0.01A	-
5A - 100.0A	0.01A / 0.1A	± 0.5% ± 0.5A
50A - 1000.0A	0.1A / 1A	± 0.5% ± 5A

Model : PHA-5850C (3000A) (Overload Protection AC 3000A)

Range	Resolution	Accuracy of Readings
10.0 - 300.0A	0.01A / 0.1A	± 1% of range
300.0 - 3000A	0.1A / 1A	

Model : PHA-5850D (1200A) (Overload Protection AC 1200A)

Range	Resolution	Accuracy of Readings
6.0 - 120.0A	0.01A / 0.1A	± 1% of range
120.0 - 1200A	0.1A / 1A	

Harmonic of AC Voltage in Percentage

Range	Resolution	Accuracy
1 - 20th	0.1%	± 2%
21 - 49th		± 4% of reading ± 2.0%
50 - 99th		± 6% of reading ± 2.0%

Harmonic of AC Current in Percentage

Model : PHA-5850A (100A)

Range	Resolution	Accuracy
1 - 10th	0.1%	± 0.2% of reading ± 1%
11 - 20th		± 2% of reading ± 1%
21 - 50th (A range)		± 5% of reading ± 1%
21 - 50th (mA range)		± 10% of reading ± 1%
51 - 99th		± 35% of reading ± 1%

Model : PHA-5850B (1000A)

Range	Resolution	Accuracy
1 - 20th	0.1%	± 2%
21 - 49th		± 4% of reading ± 2.0%
50 - 99th		± 6% of reading ± 2.0%

Model : PHA-5850C (3000A) & PHA-5850D (1200A)

Range	Resolution	Accuracy
1 - 20th	0.1%	± 2%
21 - 50th		± 6%
51 - 99th		± 10%

AC Watt

(50Hz or 60Hz, PF 0.5 ~ 1, CT = 1, continuous waveform)

Model : PHA-5850A (100A)

Range (0 to 100A)	Resolution	Accuracy of Readings
5.0 - 999.9W	0.1W	± 1% ± 0.8W
1.000 - 9.999KW	0.001KW	± 1% ± 8W
10.00 - 99.99KW	0.01KW	± 1% ± 80W
100.0 - 999.9KW	0.1KW	± 1% ± 0.8KW
1000 - 9999KW	1KW	± 1% ± 8KW

Model : PHA-5850B (1000A)

Range (0 to 1000A)	Resolution	Accuracy of Readings
5.0 - 999.9W	0.1W	± 1% ± 0.8W
1.000 - 9.999KW	0.001KW	± 1% ± 8W
10.00 - 99.99KW	0.01KW	± 1% ± 80W
100.0 - 999.9KW	0.1KW	± 1% ± 0.8KW
1000 - 9999KW	1KW	± 1% ± 8KW
0.000 - 9.999MW	0.001MW	± 1% ± 80KW

Model : PHA-5850C (3000A)

Model : PHA-5850D (1200A)

Range (0 to 3000A or 0 to 1200A)	Resolution	Accuracy of Readings	
		> 20V & > 30A	< 20V or < 30A
10.0 - 999.9W	0.1W	± 1% of range	± 2% of range
1.000 - 9.999KW	0.001KW		
10.00 - 99.99KW	0.01KW		
100.0 - 999.9KW	0.1KW		
1000 - 9999KW	1KW		

AC Voltage

(50Hz or 60Hz, Auto Range, True RMS, Crest Factor < 4, Input Impedance 10MΩ, VT (PT) = 1, Overload Protection AC 800V)

Range	Resolution	Accuracy of Readings
20.0V - 500.0V (Phase to Neutral)	0.1V	± 0.5% ± 5dpts
20.0V - 600.0V (Phase to Phase)		

Power Factor (PF)

Model : PHA-5850A (100A) & PHA-5850B (1000A)

Range	Resolution	Accuracy
0.00 - 1.00	0.01	± 0.04

Model : PHA-5850C (3000A) & PHA-5850D (1200A)

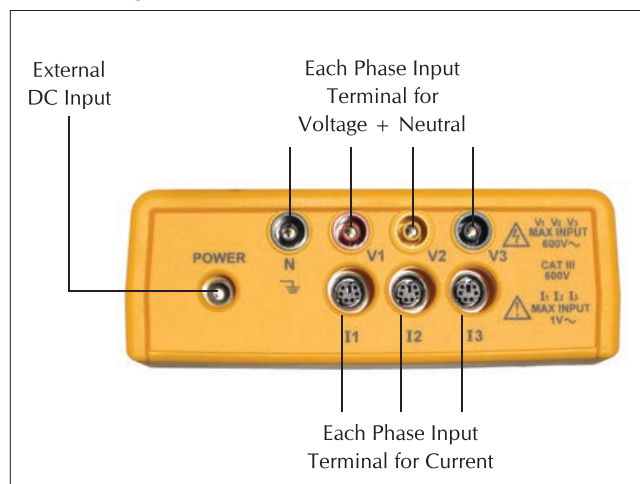
Range	Resolution	Accuracy	
		> 20V & > 30A	< 20V or < 30A
0.000 - 1.000	0.001	± 0.04	± 0.1



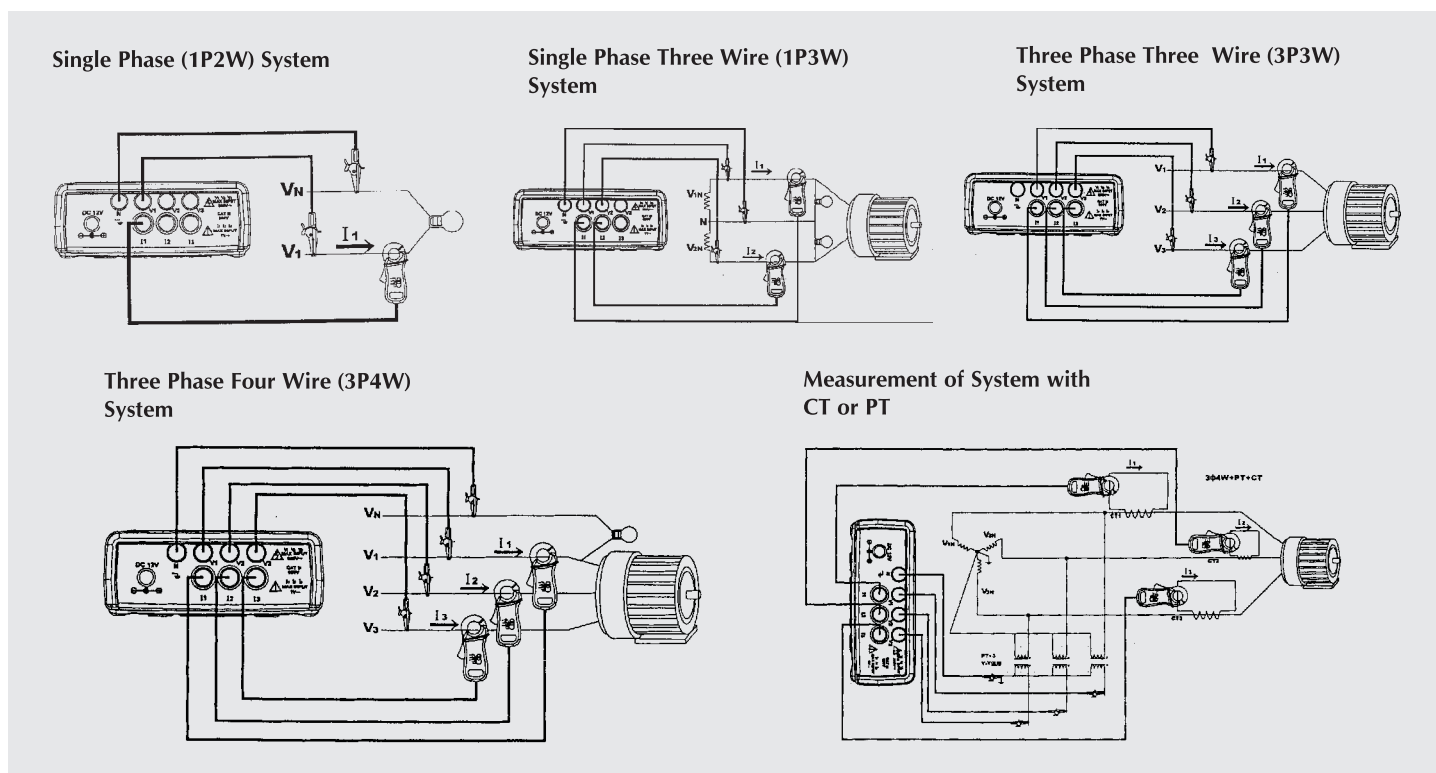
Key Description

	Exit Key		Harmonic in Magnituted Key		Setup Page
	Transient Detection Key		Select Voltage / Current Harmonics		Up Key
	Screen Hold & Read key		Select Voltage / Current Range		Down Key
	Power Page		Voltage Waveform		Left Key
	Backlight On / Off		Power On or Off		Right Key
	Selection of System		Phase Diagram / Angle		
	Recording On / Off		Voltage / Current Waveform		


Panel Description



Applications



General Specification : PHA5850

Battery Type	1.5V SUM-3 x 8	Storage Temperature	-20°C to 60°C
External DC Input	Power supply adapter 12 Volts. DC	Storage Humidity	less than 75% relative
Display	Dot Matrix LCD (240x128) with backlight	Dimension	260 x 158 x 64 mm
LCD Update Rate	1 time / second	Weight	1170 g (Batteries included)
Power Consumption	140mA (approx.)	Accessories	Voltage Test Leads x 4 (3 meter long)
No. Of Samples	1024 samples / period		Alligator Clips (Voltage) x 4 (R.Y.B.N.)
Data Logging Files	85		Carrying Bag x 1
Max. File Capacity	17474 records (3P4W, 3P3W) 26210 records (1P3W) 52420 records (1P2W) 4096 records (50 Harmonics / record)		Batteries 1.5V DC x 8
Sampling Time	2 to 3000 seconds for data logging		External DC Adaptor x 1
Low battery Indication			Software CD x 1
Overload Indication	OL		Users Manual x 1
Operating Temperature	-10°C to 50°C		Software Manual x 1
Operating Humidity	less than 85% relative		Optical USB Cable x 1
			Current Clamps x 3 (Any One Range as per Model selected)

Ordering Information

Model : PHA 5850A = PHA 5850 + CT set A Model : PHA 5850C = PHA 5850 + CT set C
Model : PHA 5850B = PHA 5850 + CT set B Model : PHA 5850D = PHA 5850 + CT set D



Model : CT set A

3 pcs (R,Y,B) Clamp - On CTs
Conductor Size : 30mm (approx.)
Range : 1 / 10 / 100A



OR

Model : CT set B

3 pcs (R,Y,B) Clamp - On CTs
Conductor Size : 55mm (approx.) Busbar 64 x 24mm
Range : 10 / 100 / 1000A



OR

Model : CT set C

3 pcs Flexible CTs
Probe Length : 24" / 610mm (approx.)
Minimum bending Diameter : 35mm
Conector Diameter : 23mm
Cable Diameter : 14mm
Cable Length from Probe to Box : 1700mm
Cable Length from Box to Output : 1700mm
Range : 300 / 3000A



OR

Model : CT set D

3 pcs Flexible CTs
Probe Length : 18" / 460mm (approx.)
Minimum bending Diameter : 35mm
Conector Diameter : 23mm
Cable Diameter : 14mm
Cable Length from Probe to Box : 1700mm
Cable Length from Box to Output : 1700mm
Range : 120 / 1200A

