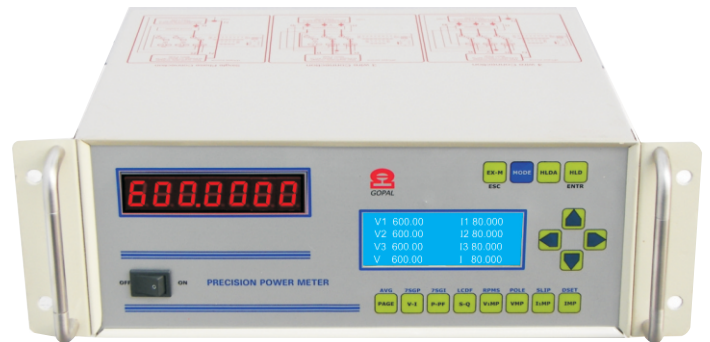


Three Phase Power Analyzer PA-600

PA-600 is equipped with 16 bit microcontroller and 16bit Analog to digital converter and hence, performs accurate measurement & calculation of V, A, P, PF, CF, FF, S, Q, with any load and signals of frequencies from 30 Hz to 800 Hz.

PA-600 is also enhanced by computer interface with free demo software viz. **"DATA TRANSFER TOOL"**. The software is capable to collect basic data in real time and transfers it to MS-Excel sheet to create report.

PA-600 is having four 10 Volt DC channel for interfacing of various types of Transducer for measurement of Temperature, Torque, RPM, Pressure, Flow etc.



Accurate measurements at low PF
Basic Accuracy $\pm 0.1\%$,
30Hz to 800Hz Band Width

Features

- 6V-600V True RMS
- 8mA-80A True RMS
- 30Hz to 800 Hz
- Four 10V DC channel
- RPM interface
- Memory-500 Test
- USB / RS-232 interface
- Two display
- Tamper proof calibration
- Portable size
- User friendly operation
- Software for computer
- Save test results by software

Variants

- PA-600 = RANGE : 600V / 80A
- PA-140 = RANGE : 140V / 5A
- Slip RPM optional
- RPM Proximity Switch optional

Scope of Measurement

- Voltage
- Current
- Power
- Power Factor
- Frequency
- Apparent Power
- Reactive Power
- Crest Factor
- Form Factor
- Trms/ Avg./ Mean/peak value

Application

- No load & Full load loss measurement of distribution & Power transformer
- Motor Efficiency Test

Warranty

1 year against Manufacturing defects.

Technical Details

General Specification

Warm up time	30 minutes
Operating temperature	20°C to 45°C
Operating humidity	20% to 75% RH (non condensation)
Storage temperature	25°C to 50°C
Insulation resistance	40M Ω or higher at 600V all of the following area Voltage input terminal to case Current input terminal to case Voltage input terminal to Current input terminal Case to power supply
Insulation withstand voltage	2000V for 1minute at 50 Hz across all of the following area Voltage input terminal to case Current input terminal to case Voltage input terminal to Current input terminal
Power supply	210V - 250V / 50Hz
Power consumption	15VA maximum
Size	280 x 260 x 130 mm (l x b x h) including projection
Panel cut out size	280 x 115 mm
Weight	3.5 kg approximate.

Input Specification

Parameter	Voltage	Current
Input type	Resistance voltage divider	Current to voltage converter
Rated Values	600Vrms for PA-600 & 140Vrms for PA-140	80Arms for PA-600, 8Arms for PA-600 - 8A & 5A for PA-140
Measuring instrument loss (Input resistance)	Approx. 2M Ω	Approx. 1m Ω
Maximum Instantaneous allowed input (1 cycle, 30ms duration)	Peak value - 1.5 kV for PA-600 & 350 V for PA-140 RMS value - 1.1 kV for PA-600 & 250 V for PA-140 (Whichever is less)	Peak value:-200A for PA-600, 20A for PA-600-8A & 12A for PA-140 RMS value:-150A for PA-600, 15A for PA-600-8A & 9A for PA-140 (Whichever is less)
Maximum instantaneous allowed input (1second duration)	Peak value:-1.4 kV for PA-600 & 195V for PA-140 RMS value:-1.0 kV for PA-600 & 230V for PA-140 (Whichever is less)	Peak value:-150A for PA-600, 15A for PA-600-8A & 9A for PA-140 RMS value:-100A for PA-600, 10A for PA-600-8A & 6A for PA-140 (Whichever is less)
Maximum continuous allowed input	Peak value:-850V for PA-600 & 200V for PA-140 RMS value:-600V for PA-600 & 140V for PA-140 (Whichever is less)	Peak value:-120A for PA-600, 12A for PA-600-8A & 7A for PA-140 RMS value:-80A for PA-600, 8A for PA-600-8A & 5A for PA-140 (Whichever is less)
Input terminal type	Banana socket (wire fit type)	Direct input: large binding Post (with 1/4" BSW copper stud with insulated nut)

Calculation Functions

Parameter	3 Wire	V * 1.73205 mode	4 Wire
Volt V	$V = (V1 + V2) / 2$	$V1 = \sqrt{3} * V1$ $V2 = \sqrt{3} * V2$ $V3 = \sqrt{3} * V3$ $V = (V1 + V2 + V3) / 3$	$V = (V1 + V2 + V3) / 3$
Current I	$I = (I1 + I2) / 2$	$I = (I1 + I2 + I3) / 3$	
Active Power P	$P = P1 + P2$	$P = P1 + P2 + P3$	
Power Factor PF	$PF = (PF1 + PF2) / 2$	$PF = (PF1 + PF2 + PF3) / 3$	
Apparent Power S	$S1 = V1 \times I1$ $S2 = V2 \times I2$ $S = S1 + S2$	$S1 = V1 \times I1$ $S2 = V2 \times I2$ $S3 = V3 \times I3$ $S = S1 + S2 + S3$	
Reactive Power Q	$Q = \sqrt{S^2 - P^2}$		
Mean Volt	$V_{mean} = 1.11072 \times \text{Voltage rectified}$		
Crest Factor cf	$cf = \text{Peak Value} / \text{RMS Value}$		
Form Factor ff	$ff = \text{RMS Value} / \text{Average Value}$		

Measurement Functions

Parameter	Voltage / Current / Active power	
System	Digital sampling, Sum of average method	
Accuracy	Frequency range 30 Hz to 44 Hz 45 Hz to 65 Hz 66 Hz to 800 Hz	Accuracy $\pm (0.2\% \text{ of rdg} + 0.2\% \text{ of rng})$ $\pm (0.1\% \text{ of rdg} + 0.1\% \text{ of rng})$ $\pm (0.2\% \text{ of rdg} + 0.2\% \text{ of rng})$ Peak/Mean above x 2
	Conditions: Temperature: $25 \pm 5^\circ \text{C}$ Humidity: 30 - 75% RH Input waveform: Sine wave	power factor: 1.0 Display digits: 5 / 6 digits AVG: 8 sample mode
Additional power factor effect on active power measurement	At 50Hz 0.035° or time delay errors 2.5 μs	
Effective input range	10-100% of Voltage, 1-100% current range rating	
Display updating value	1/ 2/ 3/ 4/ 5/ 6/ 7/ 8 seconds selectable by sample Average menu	
Frequency Measurements	Conditions: Input 30% of V1 from 30 to 800Hz Accuracy $\pm 0.1\%$ Frequency measured at input of V1 to Neutral	

Extra Input Specification -M1,M2,M3,M4,RPM

Input	L type terminal at rear side	Accuracy / Remark
Input type	DC	$\pm 0.25\% \text{ FSD}$
Maximum Input	10V	Withstand up to 20V peak
RPM CARD Input	Compatible with Gopal make rpm and slip card for measurement of motor and pump rpm	
Note	External inputs are useful for any converter connectivity and useful to measure Temperature, Torque, Flow, Pressure etc.	

Specifications are subject to change without prior notice