Gopal Electronics

LCD780

3 Phase Power Analyzer

Key Features

Basic Accuracy 0.07% R+R
Refresh rate : 250ms / 500ms / 1000ms
Up to 32th Harmonics Measurement
USB Connectivity + Free Software

Range

0 to 700 Voltage (P-N)
80Amp. Direct Measurement
CT-PT Ratio Scalable
8 Range of Voltage
8 Range of Current
30Hz to 200Hz

- Jumbo LCD Display
- 26 Keys
- Selectable display update rate
- 2MHz Sampling Rate

- Four Quadrant Power Measurement
- 1MB onboard Memory
- USB 2.0
- PH-PH, PH-N selection

- Most Accurate at Low PF
- Direct Panel Mountable design

Scope of Measurement

Voltage True RMS
Current RMS
Power (Watt)
Power Factor
Frequency
THD

Mean Voltage
Mean Current
Peak Voltage
Peak Current
DC Voltage
Inside Temperature

Harmonics up to 31th Order

Measurement Speed

- Accurate = 1 second display update time
- Fast - S1 = 1 second display update time
- Fast - S2 = 500ms display update time
- Fast - S3 = 250ms display update time

LCD780 is multi-range power Analyzer with basic 0.07% R+R accuracy. 8 range of voltage, 8 range of current and total 64 range of power and power factor gives more accurate result. The gap less four-quadrant power measurement technique gives better accuracy at distorted waveforms or AC drive (VFD) operated power supply.

LCD80 provides facility to selection speed of measurement by keypad. It play big role during setting test voltage and current in transformer testing. User can set fast speed mode during setting of test voltage and current and then accurate mode during fine measurement. It saves time in make testing easy.

Accuracy of Current

Range of current	Full Scale Value	Accuracy @ 50Hz ± (% Reading + % Range)	Resolution 5digit	Temperature co-efficient ± ppm
0.6A	.600000	0.07% R + 0.07% R	1 µA	100 ppm
1.2A	1.20000	0.07% R + 0.07% R	10 µA	100 ppm
2.5A	2.50000	0.07% R + 0.07% R	10 µA	100 ppm
5.0A	5.00000	0.07% R + 0.07% R	10 µA	100 ppm
10A	10.0000	0.07% R + 0.07% R	100 µA	100 ppm
20A	20.0000	0.07% R + 0.07% R	100 µA	100 ppm
40A	40.0000	0.07% R + 0.07% R	100 µA	100 ppm
80A	80.0000	0.07% R + 0.07% R	100 µA	100 ppm

Accuracy of Voltage

Range of Voltage	Full Scale Value	Accuracy @ 50Hz ± (% Reading + % Range)	Resolution 5digit	Temperature co-efficient ± ppm
5V	5.00000	0.07% R + 0.07% R	10 µV	100 ppm
11V	11.0000	0.07% R + 0.07% R	100 µV	100 ppm
22V	22.0000	0.07% R + 0.07% R	100 µV	100 ppm
44V	44.0000	0.07% R + 0.07% R	100 µV	100 ppm
88V	88.0000	0.07% R + 0.07% R	100 µV	100 ppm
175V	175.000	0.07% R + 0.07% R	1 mV	100 ppm
350V	350.000	0.07% R + 0.07% R	1 mV	100 ppm
700V	700.000	0.07% R + 0.07% R	1 mV	100 ppm

Accuracy of Power

Range of Power	Full Scale Value	Accuracy @ 1PF ± (% Reading + % Range)	Accuracy Lead, Lag 0.5PF ± (% Reading + % Range)	Accuracy Lead, Lag 0.1PF ± (% Reading + % Range)	Accuracy Lead, Lag 0.0PF ± (% Reading + % Range) % of VA
5V * 0.6A	3.00000	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
11V * 1.2A	13.2000	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
22V * 2.5A	55.0000	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
44V * 5.0A	220.000	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
88V * 10A	880.000	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
175V * 20A	3500.00	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
350V * 40A	14000.0	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5
700V * 80A	56000.0	0.1 + 0.1	0.1 + 0.1	0.8 + 0.8	0.5 + 0.5

Harmonics & Frequency Specification

Harmonics	Specification / Accuracy Fundamental frequency 50Hz to 60Hz
Bandwidth	50Hz to 60Hz
Signal Processing	DFT (Discreet Fourier Transform)
Sampling Frequency	8Khz
No. of Harmonics	32
THD Voltage	5%
THD Current	5%

Frequency

24Hours Accuracy of Frequency, Sine wave, when selected accurate mode, filters time 16 seconds, (Display update time 1 second), CalTemp = 25Co +- 10Co

Range of Frequency	Full Scale Value	Accuracy± (% of reading + % of range)
30Hz to 200Hz	200.00	0.01 + 0.01

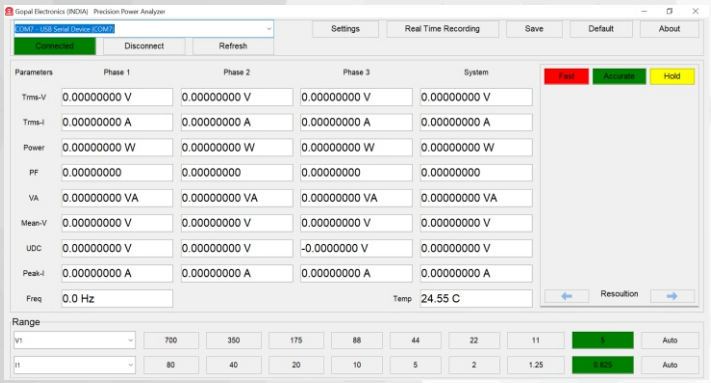
Specification

Warm up time	30 minutes (For specified accuracy)
Number of channels	3 Voltage , 3 Current
Maximum Direct Voltage Input	700V rms / 1000V peak
Voltage multiplier / PT scaling	0.01 to 500.00
Voltage Input Impedance	2.82 MΩ Phase to Neutral
Maximum Direct Current Input	80A rms / 113V peak
Current multiplier / CT scaling	0.01 to 500.00
Recommended CT	20VA to 100VA class 0.1
Power multiplier / Watt scaling	0.001 to 2.000
Operating Temperature	10 °C to 45 °C
Operating Humidity	20% to 75% RH (non condensation)
Storage temperature	-20 °C to 48 °C
Length x Width x Height	L= 330mm, W= 518mm, H= 183mm (± 2mm)
Length x Width x Height with fittings	L= 375mm, W= 567mm, H= 193mm (± 2mm)
Panel cut out size	L= 332mm, W= 520mm, H= 185mm (± 2mm)
Net Weight	4.7Kg without accessories (± 0.2Kg)
Weight with packing	9.5 Kg (± 0.2Kg)
Display type	LCD 4 x 20 line, jumbo Character, Yellow Black
Measuring Terminals	Measuring Terminals 1/4” BSW for current, 4mm banana plug for voltage
Housing	Equipped with MS case to meet stringent EMC requirements.
Fitting hardware nut bolt screw	All screw nut bolt used stainless steel (silver finish)
Environmental	98% of total weight material recyclable

Features

- Compact, high precision power analyzers – easy to carry and save working space.
- Simple user interface ensures easy, intuitive operation.
- Standard configurations allow users to specify the exact functionality required for their own unique application.
- 20x4 Jumbo LCD display
- All inputs are galvanically isolated to avoid short circuits in any type of applications.
- Harmonics up to the 31th order for Voltage and current
- User-selectable average time – 250ms Fast 3%, 500ms Fast 2%, 1000 ms Fast 1%, 16S Accurate by single key for dynamic measurements.
- 1MB on-board memory for storage of measured values.
- Computer interface with USB 2.0 & PC software for data download, analysis
- 2 MHz sample rates for detailed signal analysis, With SINC + FIR digital filter give noise free measurement.
- Bandwidth from 40 Hz to 200 Hz for reliable measurement precision.

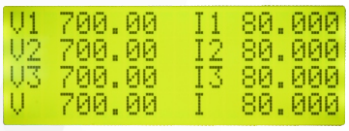
Software + USB2.0

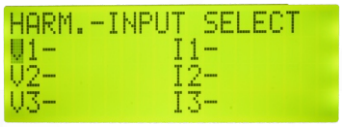


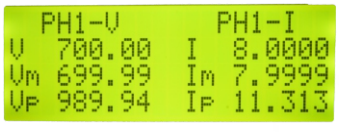
- All Reading in single page
- Range selection in software
- CT / PT scale setting
- Real time recording
- Export test result to Excel

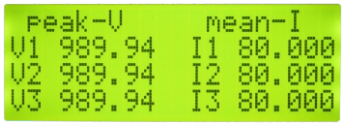
Standards and Safety

- Electrical Safety EN 61010-1 / 2nd Edition 1000 V CAT II (600 V CAT III)
- Degree of pollution 2, safety Class I
- EN 61558 for transformer
- EN 61010-2-031/032 for accessories
- Maximum Inputs For voltage inputs Measurement range 700Veff, 1kV peak
- For current inputs Measurement range 80 Aeff, 100 Apeak
- Test Voltages Mains input to housing (earth ground connector): 2.5 KV ac
- Mains connection to measuring inputs: 4kV ac
- Measuring inputs to housing: 3.3 kV ac
- Electromagnetic compatibility Emission: IEC 61326-1, EN 50081-1, EN 55011 Class B
- Immunity: IEC 61326-1 / Annex A (industrial sector), EN 50082-15









About Us

Gopal Electronics was established in 1989 by Mr. Gangaram Panchal in Ahmedabad (India), who has over 40 years of experience in magnetic measurement of soft and hard magnetic material. He invented the first product that was the single sheet watt loss tester for watt loss measurement of motor stamping and EI type laminations. That product proves as very good solutions for the trades and suppliers of electrical stamping to evaluate their material grade. We setup our new manufacturing unit at naroda, Ahmedabad in 1995. Then the development chain starts and we developed range of products like Digital Iron Loss Tester, Holiday Detector, 3 Phase Power Analyzer Epstein tester, Franklin Tester, Turns ratio meter etc. Our range of products is world renowned. These instruments are endorsed by reputed companies like ABB, BHEL, Tata Steel, Emco Ltd, Alstrom (Areva), Crompton Greaves (Germany) etc.

Exporting to More than 45 Countries

Few of our Valued Customers

- Tata Steel
- Essar Steel
- Ajanta Group
- Orient Electric
- Arev T&D
- BHEL
- Pitti Lamination
- ABB
- Crompton Greaves
- Jindal's
- Orpat
- Su-Kam Power
- Hero steel
- Poggenamp
- Schneider Electric
- Uttam Bharat Electric
- Transformer & Rectifier
- Mangal Electric
- Kotsons
- Alstom
- BRG
- Emco
- Navkar Transcore
- Danke Electric
- Electrotherm
- Vilas Transcore
- Galaxy Stampings
- Enpay Transformers
- Pressmatic Engineering
- Elgi Equipments
- Kirlosker
- Lubi Pumps
- Wilo-Mather&Platt
- Sabar pumps
- Unnati pumps
- La-gajjar Pumps
- Weg
- Vijay Electric Ltd
- Bajaj Electrical
- Kryfs
- MKS Transformer
- Polmot motor
- Rajastan transformer
- SR Electrosteel
- Voltec

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