

PRIMATA
Tecnologia Eletrônica

Technical Specifications

P55

Power Quality Analyzer



Presentation

The **Power Quality Analyzer P55** was designed to perform measurements in electric power distribution systems. It is the second generation of analyzers developed by **PRIMATA ELETRÔNICA**, aimed at meeting the demands of power distribution companies and other users in compliance with **PRODIST – Module 8 of ANEEL (Class S)**.

Weatherproof, portable and modern, the **Analyzer P55** features a data storage unit in **Pendrive**, supplied with **32GB of memory**. It has USB ports for communication, as well as a display and keypad that allow programming directly on the device. Additionally, it enables connection via a **local wireless interface** during installation, through a smartphone or tablet, for analysis of electrical parameters and **real-time graph viewing**.

With its high memory capacity, the **Analyzer P55** calculates and records all parameters without restriction, and the **SMD Software** allows the user to analyze and filter only the necessary data, with different integration intervals. Thus, there is no need to pre-program or limit the electrical parameters to be recorded in the field.



Applications

- ✓ Analysis and measurement of power quality (voltages, currents, powers, frequency, harmonics, voltage and current unbalance, fluctuation, event logging, power quality KPIs);
- ✓ Attendance to PRODIST - ANEEL Module 8 (Class S);
- ✓ Bidirectional energy reports (four quadrants), power consumption and injected energy;
- ✓ Power tariff management, demand and ICMS credit analysis;
- ✓ Power factor correction, spectrum and harmonic distortion losses (voltage and current);
- ✓ Support in the definitions of capacitor filters, with voltage and current harmonic spectrum graphs and a list for detailed analysis of amplitudes and harmonic losses;
- ✓ K-Rating calculation for new transformers (K-Factor), and transformer derating analysis (Factor-K);
- ✓ Graphical analysis of motor in-rush current curve (>1s);

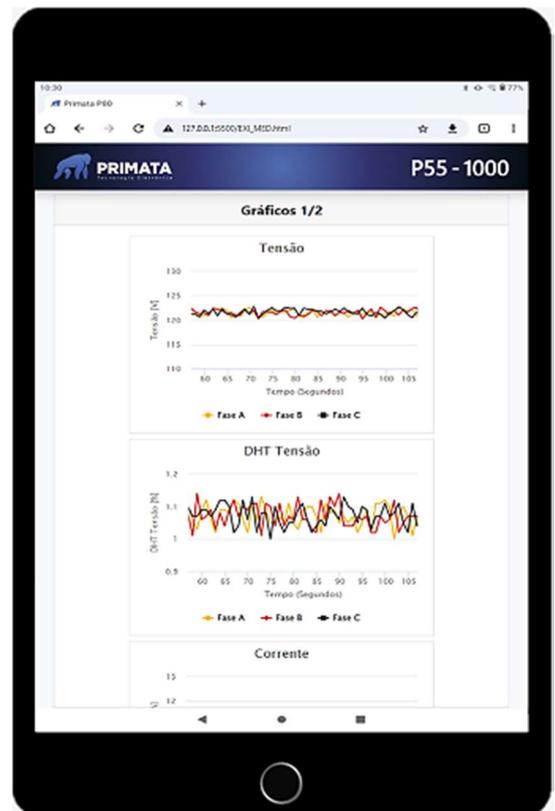
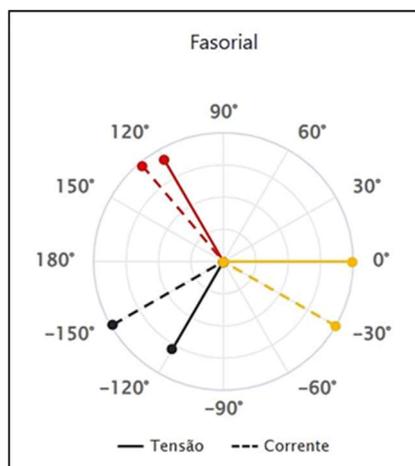
Registered/Calculated Electrical Parameters

- ✓ RMS Voltage;
 - Neutral-Phase and Phase-Phase (A, B and C);
 - Instantaneous, Maximum, Minimum and Medium;
 - Ground neutral voltage;
- ✓ RMS Current (A, B and C);
 - Instantaneous, Maximum, Minimum and Medium;
- ✓ Calculated neutral current (theoretical);
- ✓ Measured neutral current (real);
- ✓ Active, reactive and apparent powers (single-phase and three-phase);
- ✓ Single-phase and three-phase power factor (IEC Standard 61557-12);
- ✓ Frequency (A, B and C);
- ✓ Total harmonic distortion rate (Voltage and Current);
- ✓ Fundamental harmonic (Voltage and Current);
- ✓ Individual harmonic distortion rate (up to 50th harmonic - Voltage and Current);
- ✓ Negative sequence voltage unbalance (%) (IEC Standard 61000-4-7);
- ✓ Negative sequence current unbalance in (%) (IEC Standard 61000-4-7);
- ✓ Voltage fluctuation severity (IEC 61000-4-15);
- ✓ Short Term Voltage Variation Event Record - STVV (IEC Standard 61000-4-30 - with RMS value calculated every 1 cycle) with CBEMA curve graphic;
- ✓ Factor-K for transformer derating analysis and K-Factor (standard IEEE C57.110) for new transformers;
- ✓ Bidirectional Power (Four Quadrants) and Demand;

Local Wireless Interface

- ✓ Wi-Fi network generated by the Analyzer itself, allowing the user to connect to it via a smartphone* or tablet*, providing a graphical interface with real-time parameters.

* Smartphone or tablet not supplied with the equipment.



Main Information Displayed in Real Time

Type	Description	Equipment Display	Local Wireless Interface
<i>Programming</i>	display, addition, and deletion of programs	✓	✓
<i>Real Time</i>	Phasor diagram	✗	✓
<i>Real Time</i>	Electrical parameters graph	✗	✓
<i>Real Time</i>	instantaneous voltage values (phase-to-neutral and phase-to-phase)	✓	✓
<i>Real Time</i>	Total harmonic distortion of voltage per phase	✓	✓
<i>Real Time</i>	Instantaneous current values and neutral current	✓	✓
<i>Real Time</i>	Phase angle and angular difference	✗	✓
<i>Real Time</i>	Power factor	✓	✓
<i>Real Time</i>	Values of active, reactive and apparent power	✓	✓
<i>Real Time</i>	Grid frequency	✓	✓
<i>Real Time</i>	Date and time of the equipment	✓	✓
<i>Real Time</i>	Battery status of the real-time clock	✓	✓
<i>Real Time</i>	USB pendrive connected to the device	✓	✓
<i>Real Time</i>	USB pendrive available memory	✓	✓
<i>Real Time</i>	Number of valid measurements for DRP/DRC reports	✓	✓
<i>Installation Check</i>	Verification of the correct installation of the analyzer	✓	✓

Electrical Characteristics

Scale background (Voltage)	520 Vac or 1000 Vac (Phase-Phase)
Resolution	0.1 V
Accuracy	± 0.5%
Scale background (Current)	10A, 200A, 1000A, 3000A or 5000A
Accuracy (centralized conductor)	± 0.2% of reading value ± 1.0% of sensor
Power supply – Scale background of 520 Vac	
Supply voltage	70 to 300 Vac (Neutral-Phase) or 5 Vdc (USB-B)
Supply method	Any of the phases or via USB-B for measurements below 70 Vac



Power Quality Analyzer P55

Power supply – Scale background of 1000 Vac	
Supply voltage	70 to 300 Vac (Neutral-Phase) or 5 Vdc (USB-B)
Supply method	7 wires total – 5 for measurement and 2 exclusively for power supply
Measurement of ground neutral voltage	Yes
Neutral current	Calculated (theoretical) and Measured (real)
Consumption (fed by the 3 phases)	3.5 Wh in 127 V or 4.5 Wh in 220 V
Clock-calendar	With rechargeable NiCd battery (200 days autonomy without power)
Types of connection	Single-phase, 2-phase, 3-phase (Star), Delta (open and closed) and Indirect Measuring (using VTs and CTs)
Environmental operating conditions	
Level of protection	IP 659
Temperature	-10 to 60 °C
Humidity	0 to 100% without condensation
Isolation of connectors	600 V
MTBF (Mean Time Between Failures)	68.400
Recording of absences	Yes
Electromagnetic shielding	Yes

Mechanical Characteristics

Dimensions	122 x 145 x 235 mm
Weight (without cables, clips and CTs)	1900 g
Cable length (voltage signals)	2.0 m
Cable length (current signals)	2.0 m
Display with backlight	2 lines x 16 columns
Portable	Yes
Box	
Material	Thermoplastic with UV protection, high impact resistance and self-extinguishable
Level of protection	IP 659
Connectors for signals	Circular panel connectors (at the bottom)
Device for pole fixing	Yes (on top)



Internal Control Program (Firmware)

Minimum interval for events record	16 milliseconds
Memory type	Removable (Pendrive)
Memory capacity	32GB (equivalent to 170 uninterrupted days of acquisition with records every 1 second, without the need to restrict the electrical parameters to be recorded)
Data storage	Independent programming for each acquisition
Programming of internal parameters	Date and time (automatic during connection to PC)
	Transformation ratios (voltages and currents)

Communication

USB Port	115 kbps (High-speed direct computer connection)
Local Wireless Interface	Wi-Fi (Standard 802.11 b/g/n and Security WPA, WPA2)

Programmable parameters via SMD software

- ✓ Name and description of the acquisition;
- ✓ Type of trigger: immediate or by time (programmed);
- ✓ Type of termination: by date/time, by measures (number of valid measures for DRP/DRC reports) or undetermined;
- ✓ Start date and time (enabled for programmed trigger);
- ✓ End date and time (enabled for closure by date/time);
- ✓ Type of connection: star, open delta or closed delta;
- ✓ PTs transformation ratio;
- ✓ CTs transformation ratio;
- ✓ Nominal voltage (STVV events);
- ✓ No need to pre-program or restrict the electrical parameters to be recorded;

Items Supplied with the Product

- ✓ Voltage clips **P10 – Dolphin Clip – CAT III 1000V / 32A**:
 - 05 clips: Neutral, Ground Neutral, Phase A, Phase B and Phase C;
 - 02 dedicated clips for power supply for full-scale range of 1000 Vac (Phase-to-Phase);
- ✓ Current sensors (4 CTs), flexible or rigid (clamp type):
 - Neutral, Phase A, Phase B and Phase C;
- ✓ Pendrive with 32GB memory for data storage;
- ✓ USB cable for communication with computer;
- ✓ Bag for transport and storage of equipment and accessories;
- ✓ SMD Software – Data Manipulation System;



Power Quality Analyzer P55



Optional Accessory – Personalized Hardcase ¹



¹ The bag is not provided when the hardcase is purchased.

Contact us:

Tel.: +55 (41) 3223-2176

Rua Visconde de Nácar, 288, Centro
Curitiba - PR - 80410-200

www.primataeletronica.com.br



PRIMATA
Tecnologia Eletrônica

PRIMATA ELETRÔNICA products are in constant improvement. Therefore, the technical specifications contained in this material may be changed without previous notice. Check our website for possible updates.

