



PRIMATA
Tecnologia Eletrônica

Technical Specifications

P51

**Voltage Quality Analyzer
with Remote Access**



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Presentation

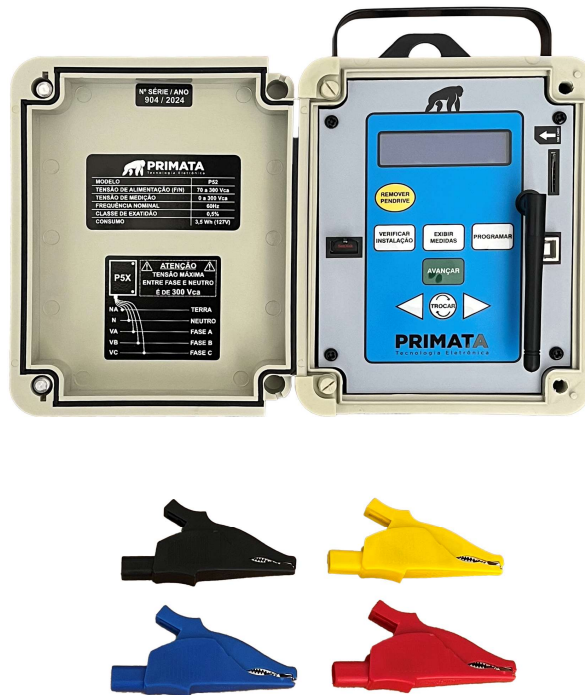
The **Voltage Quality Analyzer with Remote Access P51** is designed to perform measurements in electrical power distribution systems. It is the second generation of analyzers developed by **PRIMATA ELETRÔNICA**, aiming to meet the demands of the concessionaires and permissionaires of energy and other users.

Weatherproof, portable, intelligent and modern, the **Analyzer P51** has removable data storage unit in **Pendrive**, supplied with **32GB memory**, in addition to communication via USB ports, display and keyboard that allow programming directly in the equipment.

With the possibility of communication via **3G / 2G / GPRS Modem** and **Wi-Fi Modem**, the measured and recorded data can be monitored remotely, in real time, via web application **SMD_NET**, which is the **PRIMATA ELETRÔNICA's Energy Monitoring Web Portal**.

For a more detailed graphical analysis, event analysis, export of files to other formats and reporting, the **Local SMD Software** complements the **SMD_NET** web application. Thus, due to the native integration, simply **download remotely** the file containing the data acquisition through the **SMD_NET portal**, to then deepen the analysis in the **Local SMD**.

The **Analyzer P51** integrates all measurements of electrical parameters at pre-defined intervals. As it has a high memory capacity, there is no need to pre-program or restrict the electrical parameters to be recorded in the field.



Applications

- ✓ Analysis and measurement of voltage quality;
- ✓ Attendance to PRODIST – Module 8 of ANEEL (Class S);
- ✓ DRP/DRC reports;
- ✓ Use in measurement campaigns carried out by the energy concessionaires and permissionaires;

¹ This equipment does not contemplate the phenomena of voltage fluctuation (flicker). For this application, consult the equipment **P52 - Voltage Quality Analyzer** and **P55 - Power Quality Analyzer**.

Registered/Calculated Electrical Parameters

- ✓ RMS Voltage;
 - Neutral-Phase and Phase-Phase (A, B and C);
 - Maximum, Minimum and Medium;
 - Ground neutral voltage (**optional*);
- ✓ Frequency (A, B and C);
- ✓ Total harmonic distortion rate;
- ✓ Fundamental harmonic;
- ✓ Individual harmonic distortion rate (up to 50th harmonic);
- ✓ Negative sequence voltage unbalance (%) (IEC Standard 61000-4-7);
- ✓ Short Term Voltage Variation Event Record – STVV (IEC Standard 61000-4-30 – with RMS value calculated every 1 cycle) with CBEMA curve graphic;

Main Information Displayed in Real Time

Information	Equipment Display	SMD_NET Portal
Programs in the analyzer with the configured parameters	✓	✓
Instantaneous voltage values (Neutral-Phase and Phase-Phase)	✓	✓
Harmonic distortion rate per phase	✓	✓
Frequency	✓	✓
Number of valid measures for DRP/DRC reports	✓	✓
Verification of the correct installation of the analyzer	✓	x
Pen drive connected to the equipment	✓	✓
Available memory in the Pendrive (in days, hours or minutes)	✓	✓
Calendar clock battery status	✓	✓
Date / Time of equipment	✓	x
Equipment status (Online / Offline)	✓	✓
3G / 2G / GPRS / Wi-Fi Signal Level	✓	✓
Date / Time of network connectivity	✓	✓

Communication

Interface	USB / GSM / GPRS / Pulse Output Port ¹
USB speed	115 kbps (High-speed direct computer connection)
Modem (<i>*optional</i>)	3G / 2G / GPRS
Modem (<i>*optional</i>)	Wi-Fi (Standard 802.11 b/g/n and Security WPA, WPA2)

¹ Port with pulse output is an **optional item** for calibration of the equipment.



Applicable Software

- ✓ Local SMD – Data Manipulation System;
- ✓ SMD_NET – Energy Monitoring Web Portal;

Electrical Characteristics

Power supply	
Supply voltage	Maximum: 520 Vac (Phase-Phase) Minimum: 70 Vac (Neutral-Phase)
Power phase	Any of the phases
Consumption (fed by the 3 phases)	4.0 Wh in 127 V or 5.0 Wh in 220 V
Clock-calendar	With rechargeable NiCd battery (200 days autonomy without power)
Full scale (tension)	520 Vac (Phase-Phase)
Resolution	0.1 V
Accuracy	± 0.5%
Measurement of ground neutral voltage	Optional
Types of connection	Single-phase, 2-phase, 3-phase (Star), Delta (open and closed) and Indirect Measuring (using VTs)
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)	68400
Recording of absences	Yes
Electromagnetic shielding	Yes

Mechanical Characteristics

Dimensions (H x W x D)	220 x 146 x 107 mm
Weight (with cables and clips, without CTs)	2700 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
Data Integralization	5, 10 or 15 minutes
Memory type	Removable (Pendrive)
Memory capacity	32GB (equivalent to more than 75 uninterrupted years with records every 5 minutes, without the need to restrict the parameters)
Data storage	Independent programming for each acquisition
Programming of internal parameters	Date and time (automatic during connection to PC)
	Transformation ratios (voltages)

Programmable Parameters

- ✓ 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);
- ✓ Integration interval: 5, 10 or 15 minutes;
- ✓ Type of connection: star, open delta or closed delta;
- ✓ PTs transformation ratio;
- ✓ 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** (4 clips*):
 - Neutral, Ground Neutral, Phase A, Phase B and Phase C;
- ✓ Pendrive with 32GB memory for data storage;
- ✓ USB cable for communication with computer;
- ✓ Connection cable for voltage signals;
- ✓ Bag for transport and storage of equipment and accessories;
- ✓ Local SMD Software – Data Manipulation System;
- ✓ SMD_NET Application – Energy Monitoring Web Portal (optional);

* An additional voltage clamp (optional) is provided for measuring ground neutral voltage;



Optional Accessory – Personalized Hardcase ¹



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

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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.



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