



DPA 500N1.1

DPA 500N1.1 - full-compliant single phase harmonics and flicker analyzer up to 26 A and including VLCM option

The DPA 500N1.1 is a fully compliant analyzer for harmonics and flicker as per the latest IEC/EN 61000-3-2, IEC/EN 61000-3-3 and JIS C 61000-3-2 requirements. It follows the design specifications as per IEC/EN 61000-4-7 (for Class I instruments) and IEC/EN 61000-4-15.

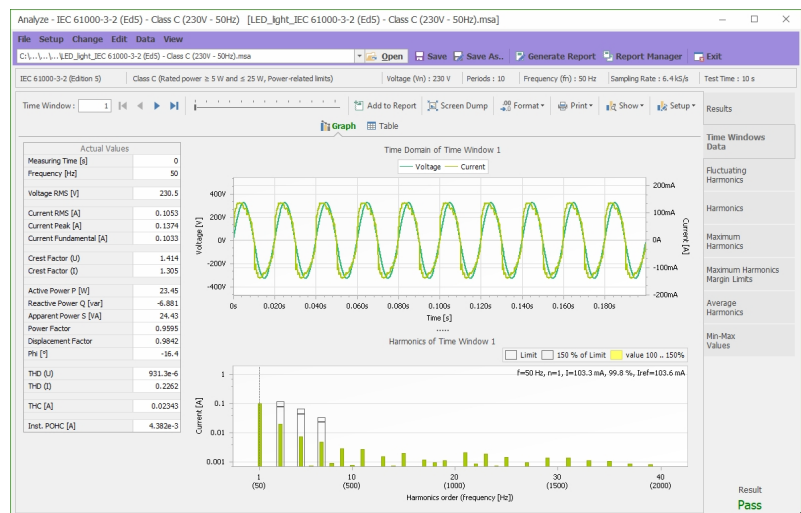
Based on a real-time kernel and equipped with its own harddisk it allows to record the measuring data continuously without any gaps or overlapping. The rectangular measurement window is synchronized to each group of 10 or 12 cycles of the mains supply frequency (50Hz or 60Hz) by means of a digital PLL (Phase Lock Loop). A wide-range current input avoids loss of measured data due to range switching that would occur when using different shunt resistors.

The classification of the measurement can be selected at any time, before or after the measurement has been performed. During all measurements the AC supply voltage is measured simultaneously with the current. The built-in flicker impedance (up to 26 A) makes the DPA 500N1.1 a complete single-box unit for both harmonics and flicker analysis. The included VLCM option adds a 0 - 500 mA current range to test low power devices like LED lamps.

MAIN FEATURES

- Real-time data acquisition
- Internal hard disk for data storage
- 16-Bit A/D converter
- Wide-range current (26 A) and voltage input
- included 0 - 500 mA current measurement range
- Built-in lumped flicker impedance up to 26 Arms
- Advanced analyzing and reporting capability
- USB interface for control and data transfer

net.control - the control and analysing software for harmonics and flicker



net.control is the software tool needed for the operation of the harmonics and flicker analysing system. It offers all features to control the DPA 500N1.1, to upload the recorded measuring data and for the classification and analysis. It includes analysis as per the latest standards as well as procedures following the former standard requirements. An easy Fail/Pass function allows fast analysis while detailed data is available for extended analysis and EUT evaluation purposes. net.control offers a powerful documentation capability with direct export to Word.

Technical Specifications

Measuring system	
Voltage	1 channel 10 - 530 Vrms (4 kVpeak), 16 bit, 15 - 3000 Hz Accuracy: ± 0.04 % of range ± 0.30 % of reading
Current	2 outputs (selectable via BNC cable) Current Measurement CM: 0 - 26 Arms continuous Very Low Current Measurement VLCM: 0 - 500 mArms Accuracy: ± 0.1 % of range ± 0.70 % of reading ± 0.08 % of (frequency / 1000)
Processing	Embedded processor (Pentium 200 MHz), signal processor (Motorola DSP), memory (internal hard disk, approx. 1 MB/min data, more than 30 hours recording time), USB interface (control and data transfer)
Harmonics	
Analyzer	Class 1 instrument according IEC 61000-4-7 Ed. 1 and Ed. 2.1 for IEC 61000-3-2, IEC 61000-3-12 (with external current transformer), JIS 61000-3-2 and related standards
Harmonics analysis	1 st to 50 th harmonic, rectangular measurement window (8, 10, 12 or 16 periods), 16 bit ADC, anti-aliasing filter (> 90 dB), FFT algorithm, smoothing filter (1 st order 1.5s digital low pass filter, on/off selectable), grouping (on/off), PLL synchronization
Flicker	
Flicker meter	according IEC 61000-4-15 for IEC 61000-3-3 and related standards (120 / 230 V, 50 / 60 Hz) Accuracy: better than 5% (as defined by IEC 61000-4-15) Observation period: Pst minimum 1 minute, selectable
Analysis	Pst, Plt, Vrms, dc, dt, dmax, Tmax, P50%S, P10%S, P3%S, P1%S, P0.1%
Impedance	built-in Z _{ref} according IEC 60725 (line 0.24 Ω + j0.15 Ω and neutral 0.16 Ω + j0.10 Ω)

General Specifications

Environment	0 - 40 °C, 10 - 90 % (non-condensing), 3 kV insulation voltage (input to housing)
Mains supply	85 - 225 V, 47 - 63 Hz, max. 50 W
Dimensions	19" 6HU housing, 266 x 449 x 500 mm / 10.4 x 17.7 x 19.7"
Weight	26 kg / 57 lbs

Available Options & Accessories

MRAC 25	19" rack with 25 height units
ACC	ISO 17025 accredited calibration

For a complete harmonics and flicker test setup, an AC source is required which provides a clean sinusoidal voltage signal. For single phase applications a choice of sources is available: ACS 500N series for simple AC applications and NetWave series to cover also immunity tests (i.e. IEC 61000-4-13). All sources are fully compliant and meet the requirements of IEC 61000-3-2, IEC 61000-3-3 and IEC 61000-4-7 in perspective of voltage and current signal quality (harmonics, accuracy, stability etc.).

Available single phase sources

Source	ACS 500N3	ACS 500N6	NetWave 3.1	NetWave 7 / 7.3
Power	3 kVA	6 kVA	3 kVA	7 kVA
Voltage range	0 - 300 VAC		0 - 310 VAC	0 - 300 VAC
max. current	12.1 A	24 A	10 A	26 A
Frequency range	10 to 80 Hz		0 to 5 kHz	
Mode	AC		AC and DC	AC and DC

