

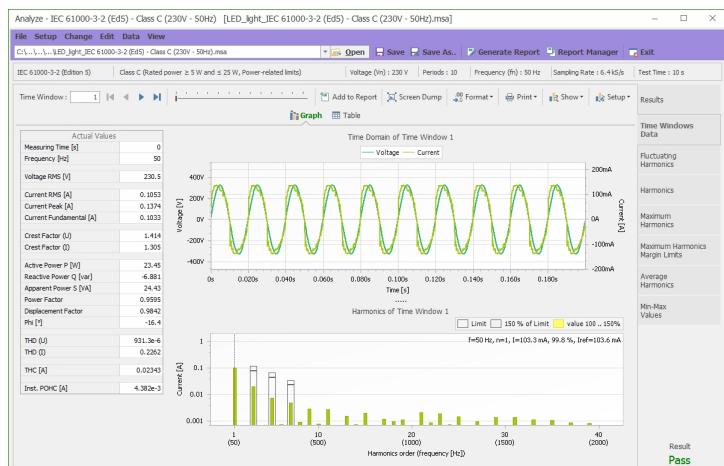
DPA 503N & AIF 503N

DPA 503N & AIF 503N - full-compliant three phase harmonics and flicker measurement system

The DPA 503N is a fully compliant three phase power analyzer for harmonics and flicker as per the latest IEC/EN 61000-3-2 and -12, IEC/EN 61000-3-3 and -11 as well as JIS 61000-3-2 and -12 requirements. It follows the design specifications as per IEC/EN 61000-4-7 (for Class I instruments) and IEC/EN 61000-4-15.

Together with a three phase flicker impedance AIF 503N (available with 16, 32, 63 or 75 A) it forms a complete harmonics and flicker measurement system. The AIF 503N incorporates the reference impedance Z_{ref} (IEC 61000-3-3) as well as the test impedance Z_{test} (IEC 61000-3-11). By adding the VLCM option, the measurement range can be extended down to the mA range (single phase) to measure low power EUTs (i.e. LEDs).

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



MAIN FEATURES

- compact harmonics and flicker system
- digital power analyzer / flicker meter according IEC
- integrated and switchable flicker impedance Z_{ref} and Z_{test}
- wide harmonics measurement range
- IEC 61000-3-2 / -12 harmonics
- IEC 61000-3-3 / -11 flicker
- USB interface for control and data transfer

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 500N and AIF 503N, 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, PDF and other file formats.

Technical Specifications - DPA 503N

| | |
|--------------------|---|
| Measuring system | |
| Voltage | 3 channels (L1, L2, L3) 10 - 530 Vrms (4 kVpeak), 16 bit, 15 - 3000 Hz Accuracy: $\pm 0.04\%$ of range $\pm 0.30\%$ of reading |
| Current | 3 channels (L1, L2, L3) internal: 0 - 16 / 32 / 63 or 75 A rms (depending on AIF 503 N model) external: depending on current transformer used Accuracy: $\pm 0.1\%$ of range $\pm 0.70\%$ of reading $\pm 0.08\%$ 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, IEC 61000-3-11 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% |
| Software | net.control |
| Harmonics | IEC 61000-3-2 editions 1, 2, 2.1, 3.2, 4, 5 and 5.1 for Class A, B, C and D devices IEC 61000-3-12 editions 1 and 2 JIS C 61000-3-2 editions 2011 and 2019 EN 12015 2014 IEC 61000-3-16 edition 1 ECE R10 revision 5 and 6 Ecodesign LED (CELEX 2019/2020) |
| Flicker | IEC 61000-3-3 editions 1.2, 2, 3 and 3.2 IEC 61000-3-11 editions 1 and 2 DIN EN 61000-3-3 Beiblatt 1 ECE R10 revision 5 and 6 |
| Features | standard library with pre-programmed setups, gapless recording with post-processing analysis and change of standard/classification, PASS/FAIL evaluation, test report generator (customizable), advanced analysis with access to detailed test data |

General Specifications - DPA 503N

| | |
|--------------|---|
| 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" 3HU housing, 133 x 449 x 500 mm / 5.2 x 17.7 x 19.7" |
| Weight | 13 kg / 28.7 lbs |

Available Options & Accessories

| | |
|-----|----------------------------------|
| ACC | ISO 17025 accredited calibration |
|-----|----------------------------------|

Technical Specifications - AIF 503N

| | AIF 503N16 | AIF 503N16.1 | AIF 503N32.1 | AIF 503N63.1 | AIF 503N75.1 |
|------------------------|---|---|--|---|--------------|
| |  |  | |  | |
| Current standard range | 1 - 16 A | 1 - 16 A | 1 - 32 A | 1 - 63 A | 1 - 75 A |
| additional ranges | | 0.1 - 10 A, included | | | |
| Low Current | not available | 5 - 500 mA, optional (VLCM Kit DPA 503N) | | | |
| Very Low Current | not available | | | | |
| Voltage | 3 x 400V ±10% | | | | |
| Frequency | 47 - 63 Hz | | | | |
| Impedance Z_{ref} | included, according IEC 60725 line 0.24 Ω + j0.15 Ω and neutral 0.16 Ω + j0.10 Ω | | | | |
| Impedance Z_{test} | not included | | included line 0.15 Ω + j0.15 Ω and neutral 0.10 Ω + j0.10 Ω | | |

General Specifications - AIF 503N

| | AIF 503N16 | AIF 503N16.1 | AIF 503N32.1 | AIF 503N63.1 | AIF 503N75.1 |
|--------------|---|------------------------------------|--------------|------------------------------------|------------------|
| Dimensions | 19" 3HU housing, 133 x 449 x 500 mm / 5.2 x 17.7 x 19.7" | 19" rack, 25 HU, mounted on wheels | | 19" rack, 38 HU, mounted on wheels | |
| Weight | 20 kg / 44 lbs | 100 kg / 220 lbs | | 220 kg / 485 lbs | 250 kg / 551 lbs |
| Mains supply | 115 / 230 V, 50 / 60 Hz Hz, max. 200 W | | | | |
| Environment | 0 - 40 °C, 10 - 90 % (non-condensing), 3 kV insulation voltage (input to housing) | | | | |

Available Options & Accessories

| | |
|-------------------|---|
| VLCM Kit DPA 503N | Low current measurement option for DPA 503N. Additional low current clamp 5A/1V with jumper on the front panel, incl. a 19" frontpanel for rack mounting in AIF 503Nx.1 or other rack |
| 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 three phase applications a choice of sources is available: ACS 503N 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 500N16 / 30 / 60 / 90 | NetWave 20 / 30 / 67 / 90 / 108 (various models) |
|-----------------|---------------------------|--|
| Power | 16 - 90 kVA | 20 to 108 kVA |
| Voltage range | 0 - 300 VAC | 0 - 300 V / 360 / 400 V |
| max. current | 18 - 75 A / phase | 26 - 100 A / phase |
| Frequency range | 10 to 80 Hz | 0 to 5000 Hz |
| Mode | AC | AC + DC |