

# DPA 503

## DIGITAL POWER ANALYZER



### FOR TESTS ACCORDING TO ...

- › EN 301489-1
- › EN 301489-17
- › EN 301489-24
- › EN 301489-7
- › EN 61000-3-11
- › EN 61000-3-12
- › EN 61000-3-2
- › EN 61000-3-3
- › EN 61000-4-15
- › EN 61000-4-7
- › EN 61000-6-1
- › EN 61000-6-2
- › IEC 60601-1-2:2002
- › IEC 61000-3-11
- › IEC 61000-3-12
- › IEC 61000-3-2
- › IEC 61000-3-3
- › IEC 61000-4-15
- › IEC 61000-4-7
- › IEC 61326
- › JIS C 61000-3-2

Harmonics and interharmonics are caused by modern electronic power conditioning modules. Such, mostly non-linear, modules to control loads and to reduce power consumption is the source of voltage at unwanted frequencies superposed on the supply voltage.

Voltage fluctuations caused by varying load currents may influence luminance or spectral distribution of lighting systems.




The impression of unsteadies of visual sensation induced by this light stimulus is called flicker.

The DPA503 is used for 3-phase applications but also supports single phase applications.

### HIGHLIGHTS

- › **FULL-COMPLIANT ANALYZER**
- › **REAL-TIME DATA ACQUISITION**
- › **INTERNAL HARD DISK FOR DATA STORAGE**
- › **6 INPUT CHANNELS**
- › **SEPARATE INPUTS FOR VOLTAGE AND CURRENT**
- › **WIDE-RANGE CURRENT INPUT UP TO 140ARMS**
- › **16BIT A/D CONVERTER**

### APPLICATION AREAS

-  INDUSTRY
-  MEDICAL
-  BROADCAST
-  RESIDENTIAL

## TECHNICAL DETAILS

### MEASURING SYSTEM

Input channels	6 (3x current & 3x voltage)
Frequency range	15Hz - 3,000Hz
A/D converter	16 Bit
Controller	Embedded processor Pentium 200MHz
Signal processor	Motorola DSP
Memory	Internal hard disk
Category	Class I per EN/IEC 61000-4-7

### VOLTAGE INPUT

Input range	10 - 530V rms
Overload	4,000V peak
Accuracy	Better than 0.4% of reading

### CURRENT INPUT

Input range	Depending on used CT model. Max. 140A with delivered CT model
Accuracy external CT	Related to 16A 2 turns better than 0.8% 5 turns better than 0.6%

### GENERAL DATA

Temperature	0°C - 40°C
Rel. humidity	10% - 90%, non-condensing
Power supply	85V - 255V, 47Hz - 63Hz
Power	Max. 50W
Dimension	19" 3HU: 133mm x 449mm x 400mm
Weight	12kg
Insulation	Input to case / input 3kV rms
Interface	USB for control and data transfer

### HARMONICS ANALYSIS

As per	EN/IEC 61000-3-2 JIS C 61000-3-2 EN/IEC 61000-3-12
Design as per	EN/IEC 61000-4-7 (1991 & 2002 & Am.1:2008)
Harmonics	1st - 50th order
Grouping as per	EN/IEC 61000-4-7 (2002) for Interharmonics
Synchronization	PLL; accuracy better than 0.005%
Measuring window	Rectangular window (8,10,12,16 periods)
Algorithm	FFT
Smoothing filter	1st order 1,5s digital low pass filter (on/off), selectable
Anti-aliasing filter	> 90dB
Measurement duration	More than 30 hours, limited by the hard-disk capability (approx. 1MB/min of measuring data)
Display	Vrms, Irms, Ipeak, Vpeak
Harmonics	V, I, Phase, P, Q, S (2nd - 50th order)
Power information	P, Q, S, Power factor, THD(U), THD(I), Crest factor(u), Crest factor(i)

### FLICKER ANALYSIS

As per	EN/IEC 61000-3-3 EN IEC 61000-3-11
Design as per	EN/IEC 61000-4-15 (1997 and 2003) 230V/50Hz and 120V/60Hz
Accuracy Pst and Plt	Better than 5%
Accuracy dmax, dc, dt	0.15%
Flicker data	Pst and Plt, Vrms, dmax, dc, dt P50%S, P10%S, P3%S, P1%S, P0.1%
Maximum values	Pst, dmax, dc, dt
Observation period	Min. 1min, selectable

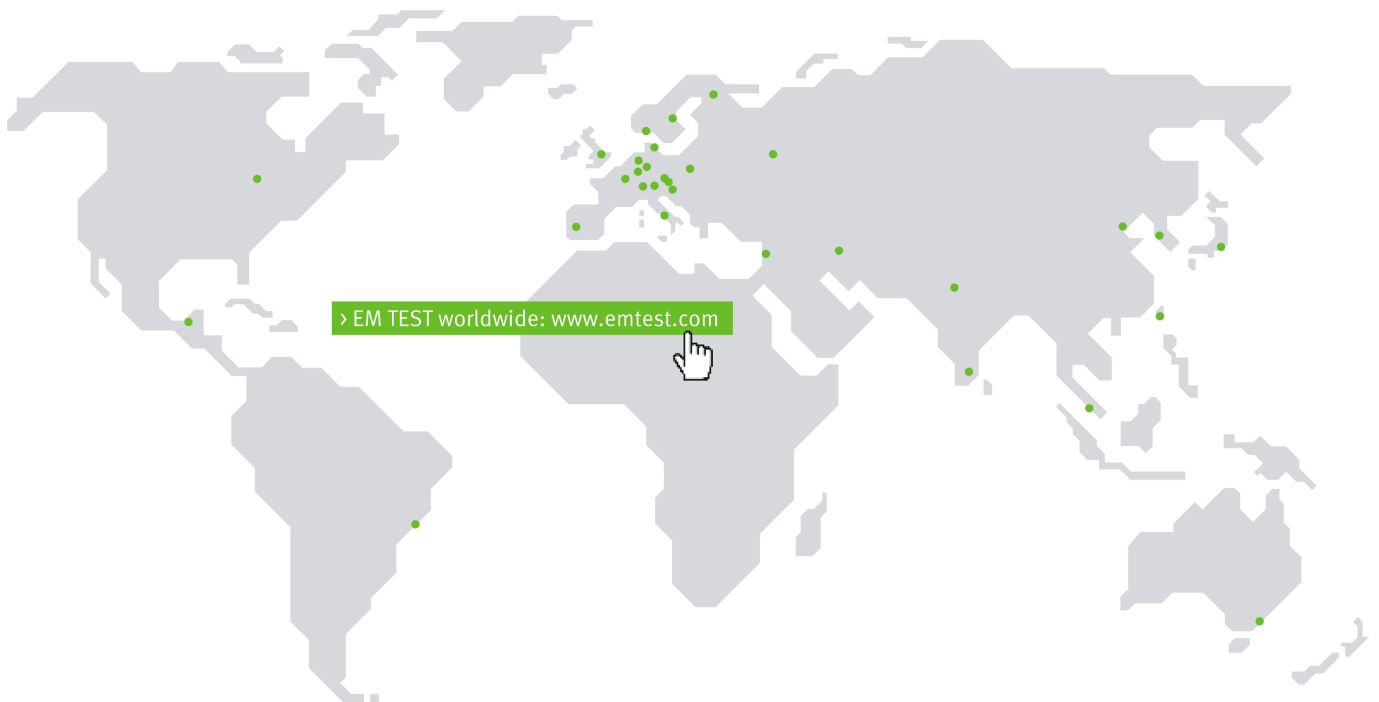
**TECHNICAL DETAILS**
**FLICKER IMPEDANCE AIF 503 (OPTION; SEPARATE UNIT)**

As per	EN/IEC 61000-3-3 and IEC 60725 for 3-phase applications
Line L1, L2, L3	0.24ohm + j0.15ohm
Neutral	0.16ohm + j0.10ohm
Accuracy	Better than 3%
R.M.S. current	Max. 16A per phase
Peak current	50A, 1s per phase
	Each inductor is designed as a non-saturable air coil and is matched manually to the specified value.

**FLICKER IMPEDANCE AIF 503S1 (OPTION; SEPARATE UNIT)**

As per	EN/IEC 61000-3-3, EN/IEC 61000-3-11 and IEC 60725 for 3-phase applications
Zref	
Line L1, L2, L3	0.24ohm + j0.15ohm
Neutral	0.16ohm + j0.10ohm
Ztest	
Line L1, L2, L3	0.15ohm + j0.15ohm
Neutral	0.10ohm + j 0.10ohm
Accuracy	Better than 3%
R.M.S. current	Max. 32A per phase
	Each inductor is designed as a non-saturable air coil and is matched manually to the specified value.

# COMPETENCE WHEREVER YOU ARE



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Information about scope of delivery, visual design and technical data correspond with the state of development at time of release.  
 Technical data subject to change without further notice.