

# PHF 4010

## Single-Phase 4000VA Harmonics & Flicker Measurement System

### ■ PHF 4010 System comprises 5 basic elements

- Analyser hardware incl. flicker meter
- IEC 60725 ref. impedance for flicker testing
- 4000VA clean AC source
- Control desktop computer
- Test Analysing & Reporting Software



The **analyser** gathers raw data from an EUT and performs measurements to extract the required information. A dedicated, fully-fledged and high accuracy power analyser is integrated in the PHF 4010. This insures that there are enough performance reserves to cover future changes and amendments of the standards.

The **reference impedance** for flicker measurements is defined as an impedance of  $0.24 + j0.15$  ohms for the phase conductor and  $0.16 + j0.10$  ohms for the neutral conductor.

The **AC source** must generate a clean sine wave with very little distortion. The standard specifies also  $\pm 2\%$  tolerance for voltage amplitude and a crest factor of 1.40 to 1.42 under any load condition.

PHF 4010 includes a 4'000VA single-phase source. For applications requiring high peak currents, PHF 4010 source can deliver up to 6 times the nominal rms current. This means **repetitive peak current can reach up to 96A**.

The **software package** together with the desktop **PC** is used to select test type and test parameters, controls the test process, collect and store real-time measurements and generate a test report.

### ■ Features

- ☑ **Testing to IEC & EN 61000-3-2 for Harmonics**
- ☑ **Testing to IEC & EN 61000-3-3 for Flicker**
- ☑ **Analysis** of Test Results
- ☑ **Automatic Test Report** generation
- ☑ **Flexible** to meet individual needs
- ☑ **Clean and powerful AC Source**
- ☑ Real time **AC Source verification**
- ☑ Includes **ALL** latest **IEC & EN amendments**
- ☑ **According to current and future standards**
- ☑ **Easy to use** Test System

### ■ Benefits

**International application** - Specifically designed to meet and exceed the requirements of IEC, EN, and JEDEC tests for power line applications.

**Turnkey Test System** - PHF 4010 is complete. Software is pre-loaded on the system computer and ready to go. This approach completely eliminates interfacing and wiring issues.

**High Current Crest Factor** - PHF 4010 AC source can deliver repetitive peak current **6 times** the nominal rms current. This is essential for applications where high peak current is needed.

**Fully Compliant** - PHF 4010 system is fully compliant to the existing and new draft versions of IEC & EN standards.

**Report Generation** - PHF 4010 enables fully automated test report generation.

**Faster Fault Diagnosis** - The PHF X software package requires the minimum of user intervention to get started and once the test is completed, data can be easily evaluated to determine EUT performance.

### ■ Applications

- ☑ Single-phase power systems **up to 16A**
- ☑ EN & IEC 61000-3-2 Limits for current Harmonics
- ☑ EN & IEC 61000-3-3 Limits for voltage Flicker

## ■ Technical Specifications

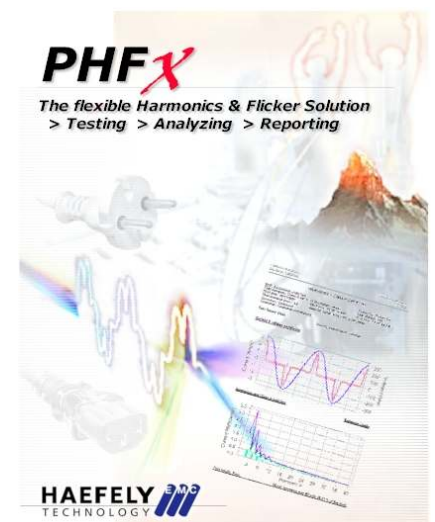
AC Power Source Specifications		Measurement System Specifications	
Maximum Output Power	4000VA	Voltage Range	0...720V rms /1.6kV peak
Output Voltage Range	150Vac or 300Vac	Current Range	0...21A rms / 120A peak
Voltage Accuracy	0.5%	Current shunt resistance	5 Milliohms
Voltage Distortion	0.3% @ 50/60Hz	Frequency meas. range	45...65Hz
Max. Current 300V Range	16A rms / 96A peak		
Max. Current 150V Range	32A rms / 192A peak		
Frequency Accuracy	0.15%		
Harmonics Analysing		Flicker Analysing	
Class Measurements	A, B, C, D	Measured Parameters	Pst, Plt, dc, dmax, d(t)
Harmonic Type Analysis	Steady State / Transient	1Φ Reference Impedance	According to IEC 60725
Weights	approx. 68 kg	Dimensions (w x h x d)	approx. 52 x 43 x 62 cm

## ■ Measurement Standards Overview covered by PHF 4010

Limits for current Harmonics	Harmonics Testing and measurement techniques	Limits for voltage Flicker	Flicker Testing and measurement techniques
IEC/EN 61000-3-2:2000	IEC/EN 61000-4-7:2002	IEC 61000-3-3:1994	IEC 61000-4-15:1997
IEC 61000-3-2:2000/A1:2001		EN 61000-3-3:1995	EN 61000-4-15:1998
IEC 61000-3-2:2000/A2:2004		IEC 61000-3-3:1994/A1:2001	IEC 61000-4-15:1997/A1:2003
EN 61000-3-2:2000/A2:2005		EN 61000-3-3:1995/A1:2001	EN 61000-4-15:1998/A1:2003
IEC/EN 61000-3-2:2005		IEC 61000-3-3:1994/A2:2005	
		EN 61000-3-3:1995/A2:2005	

## ■ Scope of Supply Art. No. 249812

- Qty. 1 Analyzer Hardware incl. Flickermeter according to IEC 61000-4-15
- Qty. 1 IEC 60725 Reference Impedance
- Qty. 1 Power Amplifier AC Source
- Qty. 1 Controller computer incl. Monitor, Keyboard & Mouse
- Qty. 1 Test, Analysing and Reporting Software
- Qty. 1 Users Manual



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