York EMC Services

HFG01
Harmonics and Flicker Generator

Product Technical Information

Harmonics and Flicker Generator: HFG01

The Harmonics & Flicker Generator (HFG01) has been designed for the purpose of verifying harmonic and flicker test equipment. It provides an easy and reliable way to externally check the performance of the measurement system to the EN/IEC 61000-3-2 harmonics and EN/IEC 61000-3-3 flicker standards; particularly important as these tests rely on software control and calculation, and for which there is no intuitive sense of the response.

The HFG01 provides a series of harmonic and flicker disturbances of a nominal but stable level. This allows the user to periodically verify their test equipment, helping maintain compliance with standards and laboratory quality procedures. Alternatively, due to its stability, it may be used as a transfer standard from a known, calibrated test system.

HGF01

The HFG01 is a standalone device and requires no additional equipment. It connects directly to the test equipment and simulates the equipment under test (EUT), generating known, repeatable levels of harmonic and flicker disturbance.

Features

- **Stable load simulation**
  - Repeatable measurements for test system verification
- **Injects harmonics to EN 61000-3-2 and flicker to EN 61000-3-3**
  - Evaluation of test systems specifically to EN standards
- **Harmonic test modes**
  - Steady-state harmonic-rich load current, representing a fixed load
  - Harmonic-rich load currents fluctuating between two load conditions
- **Flicker test modes**
  - Fixed level of mains disturbance at 1 Hz rate
  - Fixed level of mains disturbance at 8.33 Hz rate
- **Compact and portable**
  - Comparisons between sites and environments

Applications

- **Harmonics and flicker measurement systems validation and verification**
- **Reference source for:**
  - Daily pre-test verification checks if required by the accreditation authorities e.g. ISO 17025
  - Long term performance monitoring
- **Comparison of different harmonics and flicker measurement systems**

Manufacturer's calibrations

CAL12 Measurement of harmonic and flicker disturbance generated:

- Harmonics
  - Measurement of load current made according to EN 61000-3-2 in Steady State and Fluctuating Harmonics modes. Fundamental (50 Hz) to 40th harmonic.
- Flicker
  - Measurement of short term flicker (Pst) made according to EN 61000-3-3 with disturbance at 1 Hz and 8.33 Hz rates

Specifications: Noise mode

Frequency range	50 Hz to 2 kHz (40th harmonic) direct connection
Output connector	Captive BS 1363 3-pin UK mains plug, for connection to test equipment
Dimensions	330 mm × 320 mm × 170 mm
Weight	4 kg
Power supply	230 Vac, 50 Hz, 400 W (maximum)
Indicators	Thermal shutdown
Harmonic current	(see graphs)
Flicker disturbance	(see graphs)

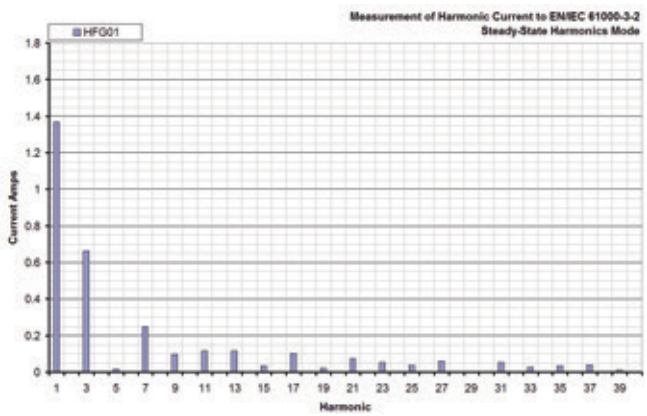
Standard kits

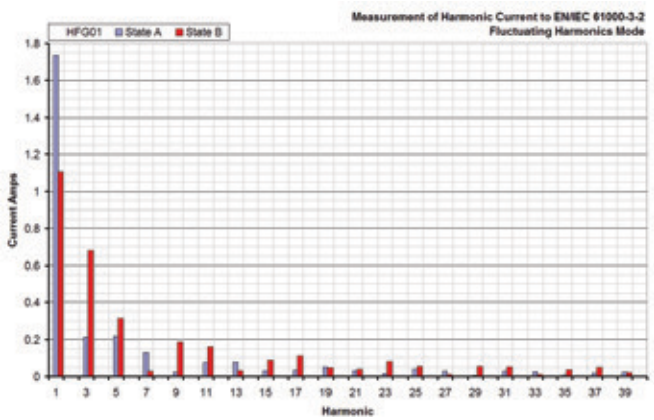
Part Number	Description	Parts included
HFG01KIT01	Standard HFG01 harmonics and flicker generator kit	• HFG01 harmonic and flicker generator • CAL12 – measurement of harmonics and flicker generated, all modes • US and EU mains plug adapters • Manual

Harmonics and Flicker Generator: HFG01

Typical output measurement results

Harmonic disturbance:





Flicker disturbance:	**Rate**	**Pst***
	1.0 Hz	0.450
	8.333 Hz	1.10

*Note that the actual Pst measured may depend on the measurement equipment used.

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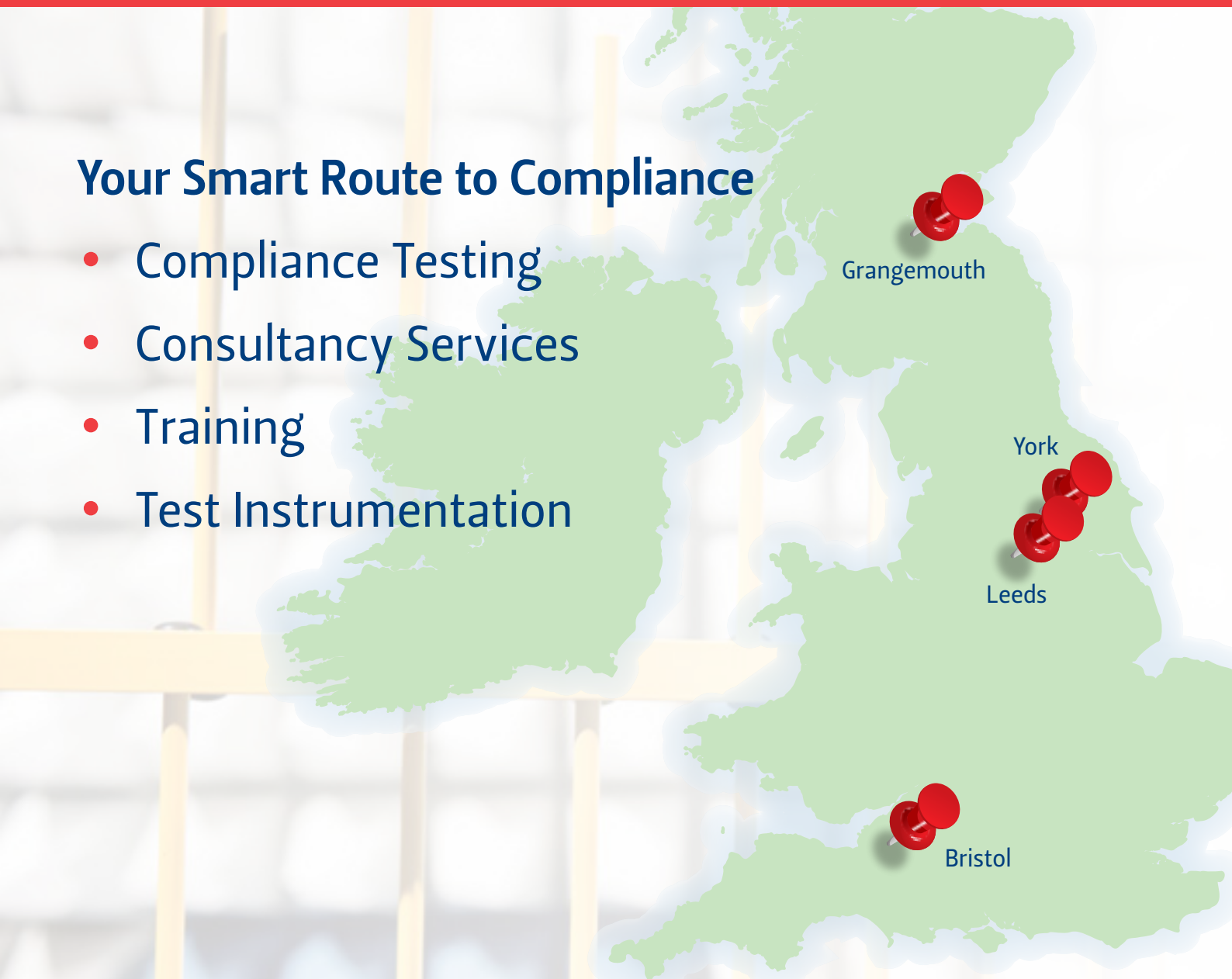

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