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.

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

<table>
<thead>
<tr>
<th>CAL12</th>
<th>Harmonics</th>
<th>Measurement of load current made according to EN 61000-3-2 in Steady State and Fluctuating Harmonics modes. Fundamental (50 Hz) to 40th harmonic.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flicker</td>
<td>Measurement of short term flicker ($P_{\text{st}}$) made according to EN 61000-3-3 with disturbance at 1 Hz and 8.33 Hz rates</td>
</tr>
</tbody>
</table>

Image: HFG01

For further information please contact: Eurofins York, Market Square, University of York, Heslington, York. YO10 5DD
Specifications

Dimensions: 330 mm x 320 mm x 170 mm
Weight: 6.5 kgs
Power supply: External power supply, 24 Vdc, 1 A maximum
Test supply connector: 1.3m captive lead with CEE7/7 plugs for connection to test equipment
Indicators: Thermal shutdown
Harmonic current: Up to 40th harmonic: 50 Hz to 2 kHz
Flicker disturbance: 1 Hz and 8.33 Hz

Standard kits

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Parts included</th>
</tr>
</thead>
</table>
| HFG01KIT01  | Standard HFG01 harmonics and flicker generator kit | • HFG01 harmonic and flicker generator  
• CAL12 – measurement of harmonics and flicker generated, all modes  
• Manual  
• External power supply |

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Typical output measurement results

Harmonic disturbance:

Flicker disturbance:  
<table>
<thead>
<tr>
<th>Rate</th>
<th>( P_{st}^* )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Hz</td>
<td>0.450</td>
</tr>
<tr>
<td>8.33 Hz</td>
<td>1.10</td>
</tr>
</tbody>
</table>

*Note that the actual \( P_{st} \) measured may depend on the measurement equipment used.
Your Smart Route to Compliance

- Compliance Testing
- Regulatory Advice and Support
- Training
- Test Instrumentation
- Calibration