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Above: IsoTek Genesis dual-cell mains sine wave generator

ISOTEK GENESIS: THE SOURCE OF GREAT SOUND

Introducing the Genesis from IsoTek – the first dual-cell mains generation device for high-performance audio systems that creates an entirely new, fully optimised mains sine wave

Hampshire, England -- Mains electricity is distorted by numerous factors as it travels from power stations to be distributed throughout our homes, eroding the performance of high-quality audio and AV systems. For more than a decade, IsoTek has manufactured class-leading mains conditioning components that filter and distribute the mains supply to deliver pure, consistent power that instantly improves sound quality. But what if, instead of filtering the existing mains supply, a device could build an entirely new, fully optimised mains sine wave from scratch? That is precisely the role of IsoTek's new Genesis – the world's first dual-cell mains sine wave generator for audio and AV systems.

There are a number of devices already on the market that are commonly referred to as 'mains regenerators'. Typically, these attempt to reconstitute an 'ideal' mains sine wave by matching the incoming mains supply to a 50Hz 'template'. The effectiveness of these regeneration systems is at least partially dependent upon the level of distortion of the incoming supply.

IsoTek's Genesis is distinctly different. Unlike existing mains regenerators, it builds a completely new sine wave within two identical, independent generation cells. An extremely low distortion, synchronous sine wave

generator creates a fully optimised signal inside each cell, which is amplified by a 300W generation engine running in Class A/B and fed to a high-quality output transformer with copper foil between the primary and secondary output, thus preventing distortion and noise passing through the unit. When both cells are combined, the result is 600W of continuous, newly generated power.

A critical part of the process is IsoTek's unique synchronous sine wave system, which replicates the frequency with zero variation so as not to create destructive harmonic distortions (beat frequencies) between the incoming mains supply and the generated electricity. In addition to eliminating distortion and producing an ultra-stable sine wave, the Genesis also controls mains voltage, ensuring the output voltage is maintained at 230V +/- 2%. By way of comparison, the European standard is 230V +/- 10%.

The end result is an extremely precise and consistent 230V/50Hz mains sine wave with vanishingly low levels of distortion, independent of the input quality of the power line. Whatever the level of distortion of the incoming mains supply, Genesis delivers exceptionally low THD (Total Harmonic Distortion) of between 0.05% and 0.17% with typical loads, remaining well below 0.3% with even the most complex loads.

The Genesis was born from a desire to make a more effective mains generative component, as Keith Martin, IsoTek's founder and managing director, explains: "We looked at existing regeneration systems and thought 'we can build something better'; six years of extensive R&D later and this is the result. We call the Genesis a dual-cell mains sine wave generator, rather than a regenerator, to emphasise the unique way in which it operates – using two 300W generation engines to create a fully optimised mains sine wave from scratch. No other device delivers such ultra-low levels of distortion with such unerring consistency, and the resultant uplift in sound quality is remarkable: clearer, smoother and better defined, more open, dynamic and engaging."

Tailor-made for front-end components

The Genesis is optimised for front-end components – source components and preamplifiers – because they are Class A devices and use almost constant current regardless of the music being reproduced. (Power amplifiers and electrostatic speakers that do not consume more than 300W each are also applicable, although power amps are generally better suited to mains conditioners with a very low impedance, rather than generative devices.)

Four high-quality outlets are provided, each one fully isolated; no two outputs are connected together, thus eliminating differential mains noise created by cross-contamination between the connected audio components. At the front of the unit, a bright, clear OLED display shows input/output voltage, input/output THD, power consumption of the connected audio equipment and the power status of the generation engines.

In addition to the exceptional sonic benefits delivered to every connected component, the Genesis delivers complete and unlimited surge protection, spike protection and over-voltage protection for valuable audio equipment. No disturbance to the incoming mains supply will be transmitted to the output sockets.

The Genesis joins Super Titan – the world's most powerful mains conditioner – at the vanguard of IsoTek's flagship Ultimate Series. While the former is perfect for front-end components, the latter's huge current delivery is ideal for big, current-hungry power amplifiers. Together, they form a unique, and uniquely

effective, mains optimisation system – a new benchmark in clean power for the world’s finest audio and AV systems, resulting in terrifically enhanced performance.

Integral isolation support

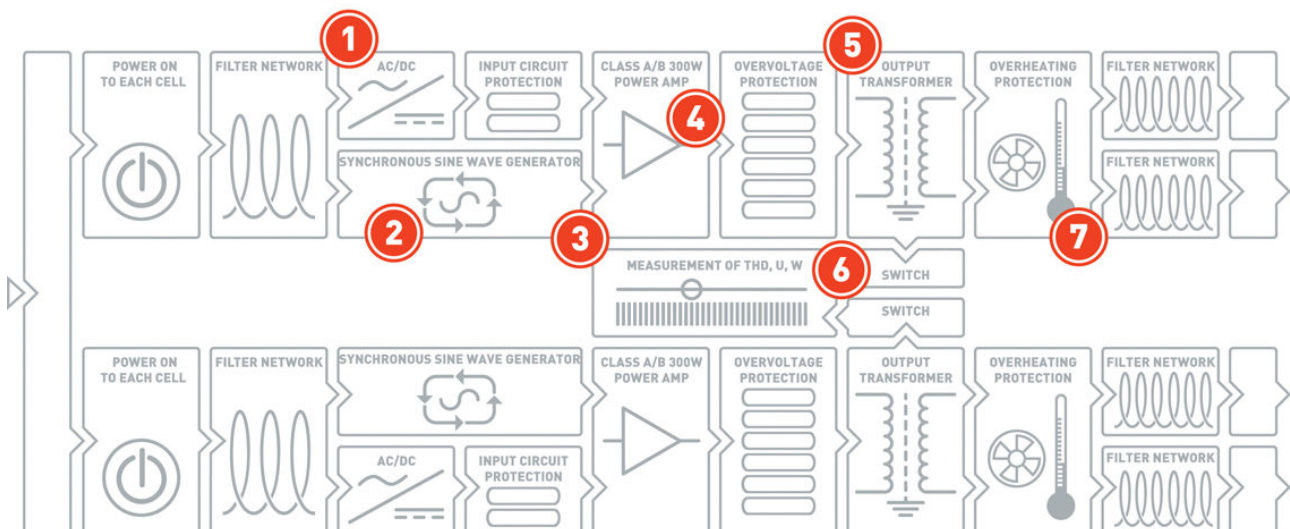
Like the Super Titan, the Genesis’ rigid aluminium casework is cradled in a specially developed support structure called ISIS (Independent System Isolation Support). The main unit is point-clamped between two panels at the top and bottom, each of which is formed of a special resonance-damping material sandwiched between two ultra-dense plates, with the overall structure supported by four substantial aluminium pillars.

ISIS was developed in conjunction with Kurt Olbert, the founder of Clearlight Audio and an acknowledged expert in developing proprietary materials for audio applications. Its purpose is two-fold. First, it reduces the effect of airborne vibration and microphony, as well as subsonic vibration and resonance in the device itself, which are detrimental to the performance of electronics. Second, its shape, strength and resonance-damping abilities provide a perfect platform on which to place other components, its stackable design saving space when using several IsoTek units – Genesis and Super Titan, for example – together in one system.

Dual-cell mains sine wave generation – how it works

The Genesis incorporates two identical, fully independent generation cells, each one delivering up to 300W of fully optimised power to either one or two connected audio components (600W combined, delivered to the unit’s four outlets). There are a number of advantages to this dual-cell approach. In terms of performance, the benefit can be compared to that of utilising a multi-core processor in a computer – the workload is shared, resulting in more efficient and effective operation, which in the case of the Genesis leads to lower signal distortion. In addition, the twin generation cells are entirely isolated from each other, reducing cross-contamination between components. Plus, if the audio components connected to one of the cells are not currently in use, that cell can be powered down independently, thus reducing energy consumption.

The diagram below depicts the various processes within each generative cell, from input to output:



1. After passing through a sophisticated filter network, mains electricity is converted into DC, which is

subsequently delivered to a high-voltage generation engine (300W amplifier). All of the mechanical noise caused by a low-quality mains supply is entirely avoided, as there is no input transformer to vibrate.

2. A high-quality synchronous sine wave generator feeds the generation engine at the same frequency and exact phase as the incoming mains supply. This ensures that no unwanted phase shifts are created between components connected directly to the mains and components connected directly to the Genesis. The phase shift between the mains input and output is zero – it is entirely synchronised with the mains.
3. Current positive feedback in the design allows the Genesis to deliver constant voltage, low distortion and zero phase shift to all connected loads.
4. The output from the generation engine is a pure sine wave with exceptionally low distortion.
5. An extremely high-grade isolation transformer brings the voltage back up to 230V AC.
6. Bright, clear OLED display shows 'snap shot' measurements for THD, voltage and power consumption. The advantage of this system is to avoid any pollution to output signals via the display circuit through continuous measuring.
7. Sophisticated protection systems include input protection, overvoltage protection and intelligent temperature protection, the latter incorporating a variable-speed, super-quiet fan that only comes into operation if needed.

IsoTek Genesis – at a glance

- World's first dual-cell mains sine wave generator for audio and AV systems.
- Eliminates both Common Mode and Differential Mode mains noise.
- Exceeds 80dB of noise elimination down to 3.5kHz and 60dB down to DC (0Hz).
- Reduces THD in the mains supply to between 0.05% and 0.17% with typical loads (0.05% with no load attached, remaining below 0.3% with even the most complex loads).
- Intrinsic noise floor extends down to -120dB from 20kHz into the MHz frequency range.
- Stabilises voltage to 230V +/- 2%.
- Delivers up to 600W of 100% clean power for front-end components.
- Fully independent outlets – prevents Differential Mode mains noise cross-contamination.
- Unique ISIS isolation system – eliminates resonance from the sub-chassis of the Genesis.

Price and availability

The IsoTek Genesis is available now in silver or black, priced at £12,995. Each unit ships with an accessories pack including an IsoTek Extreme high-performance mains cable, Blue Horizon Spike Shoes and Blue Horizon Clean-IT contact enhancing solution.

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isoTek®

Launched in Hampshire in 2001, IsoTek is the world's leading brand of specialised power management products for hi-fi and home cinema use. Its product range includes high-performance mains cables and connectors, plus a range of performance-enhancing power conditioners focused on the specific requirements of individual systems. IsoTek products are enjoyed by more than 50,000 customers in 45 countries, and have earned numerous accolades from specialist audio and AV publications worldwide. A number of third-party manufacturers use IsoTek products for development and/or demonstration purposes, including Arcam, Denon, Genesis, Marantz, Monitor Audio, Nordost, Onkyo, Pioneer, PMC, Roksan and TEAC Esoteric. All IsoTek products are designed for purpose, manufactured in Europe and built to last. UK distributor: Sound Foundations Ltd. (Tel: 01276 501392).

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