

NO-BREAK KS[®]7*e*

Concentrated Energy



2750 kVA (50Hz) | 3000 kVA (60Hz)
DIESEL ROTARY UNINTERRUPTIBLE POWER SUPPLY SYSTEM



EURO-DIESEL
we secure your power

Data Centre owners, operators and designers are required to meet ever increasing and demanding expectations: **high levels of availability, redundancy, power efficiency and density** are all measurements by which they are evaluated.

In order to deliver on these critical business objectives, while maintaining a scalable and modular approach, the use of the EURO-DIESEL NO-BREAK KS[®]7^e is the one Rotary Uninterruptible Power Supply system you can rely on **to meet these expectations**.



HIGHEST POWER DENSITY



The design of the NO-BREAK KS[®]7^e has been engineered to deliver **2750 kVA at 50Hz (3000 kVA at 60Hz) of IT load** with the smallest footprint and highest efficiency in the industry.

When a combination of IT and mechanical loads must be secured, the NO-BREAK KS[®]7^e-SB, dual output version, delivers up to 3300 kVA at 60 Hz.

The **smallest footprint in the world** translates not only to lower construction and installation costs but also leaves more space available for IT loads. A higher power rating means that fewer units are required to secure your power.

This scalable and modular NO-BREAK KS[®]7^e is available in building blocks of N, N+N, N+1, 2N, 2N+1 and in Isolated Parallel configuration either at low or medium voltage.

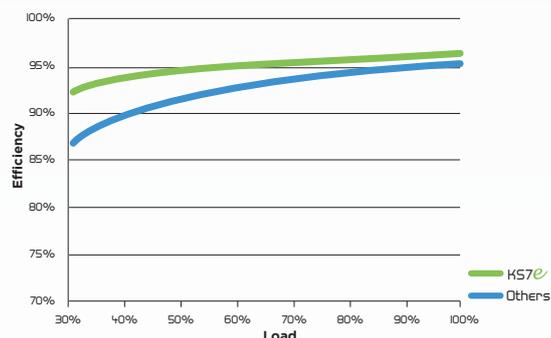
HIGHER EFFICIENCY



The sharp design of the NO-BREAK KS[®]7^e has eliminated over 20% of the losses within the NO-BREAK KS[®] system which allows EURO-DIESEL to offer the **most efficient Diesel Rotary UPS in the world**.

The variable cooling system only functions when needed, at the required level, greatly reducing the system losses at partial loads.

Every kW counts, so the NO-BREAK KS[®]7^e can run in Eco-Mode, i.e. the speed of the accumulator adapts automatically to partial loads, reducing the energy losses even further.



Improved efficiency of the NO-BREAK KS[®]7^e with variable cooling vs. other Diesel Rotary UPS systems.

100%
AVAILABILITY

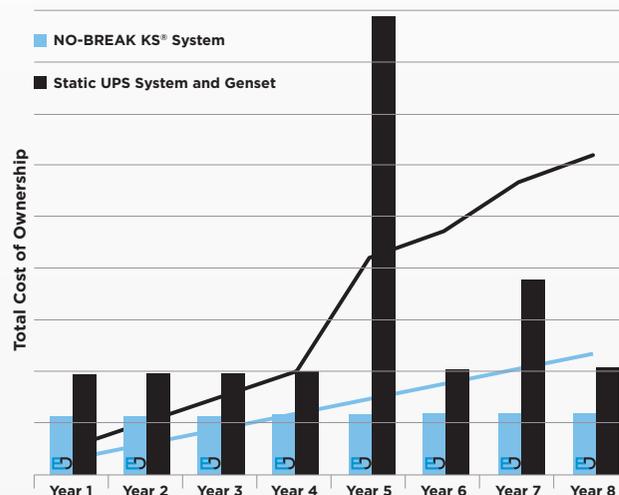


The new NO-BREAK KS[®]7^e is engineered with you in mind. The reliability has been **further improved by eliminating further single points of failure.** **The footprint and downtime are reduced** and the efficiency increased by over 20%.

The maintenance program can be performed by our technicians while the system is running and fully operational. In other words, **your load is secured at all times and the maintenance does not interfere with your daily activities.**

The maintenance of the diesel engine can be easily planned, and can be organized in such a way that maximises the uptime during maintenance events.

The NO-BREAK KS[®] will reduce your CAPEX and OPEX when compared to static UPS and diesel standby generators.



**based on a multi MW site, with the battery replacement costs in year 5 and the capacitor replacement costs in year 7 for the static UPS solution.*

NO-BREAK KS[®] Systems need few active components, eliminate power conversion and deliver very high levels of end-to-end efficiency.

When considering the efficiency figures of static UPS's, one must take into account the additional energy consumption of the mandatory air conditioning, rectifiers and other ancillary equipment.

Selecting the NO-BREAK KS[®]7^e is the guarantee of the best proven end-to-end efficiency. The latest state of the art system design will positively impact your operating costs and will easily help you save hundred thousands of Euros (\$, £) for a mid size facility.

ENVIRONMENTALLY
FRIENDLY



EURO-DIESEL's Diesel Rotary UPS systems do not require batteries or power electronics. They are environmentally friendly **producing no toxic or chemical waste** and do not need replacement of the batteries after only a few years of operation.

The noise level of the NO-BREAK KS[®]7^e is significantly reduced which positively impacts the installation costs and the required footprint.

OUTSTANDING
RELIABILITY



EURO-DIESEL's systems are known to be extremely reliable thanks to their intelligent and simple design. The outer rotor of the Kinetic Energy Accumulator runs at less than 3000rpm while the main shaft runs at 1500rpm (1800rpm at 60 Hz). The low relative speed results in an extended bearing lifetime for all NO-BREAK KS[®] Systems. Major overhauls are performed only after 10 years.

The NO-BREAK KS[®]7^e sets the standard thanks to carefully optimized components and materials providing unmatched reliability.

The best electrical performance, at all times

Your critical load needs to be protected from voltage and frequency deviations, at all times.

By selecting a NO-BREAK KS® System, you choose the most reliable uninterruptible power supply system delivering high quality power by suppressing voltage spikes, mitigating harmonics (both from the mains and from the load), with the capability to deliver high inrush or short-circuit currents.

1 Kinetic energy accumulator
Engineered to provide sufficient kinetic energy to guarantee a safe transfer from conditioning mode into independent diesel mode at all times.

2 4-Pole Synchronous Machine
Available for MV and LV operations, the alternator generates a perfect sine wave and, together with the choke, performs voltage regulation and removes down- and upstream disturbances.

3 Variable cooling
Reduces the ventilation losses in accordance to the system load and ambient conditions. This improved design reduces system losses by over 15%.

4 Auto Greasing
Standard continuous automatic greasing to all bearings without downtime, while protecting your load.

5 Guaranteed start utilizing an electromagnetic clutch
Maintenance-free electromagnetic clutch ensures a soft and reliable power transmission and acts as a fully redundant start system of the diesel engine.

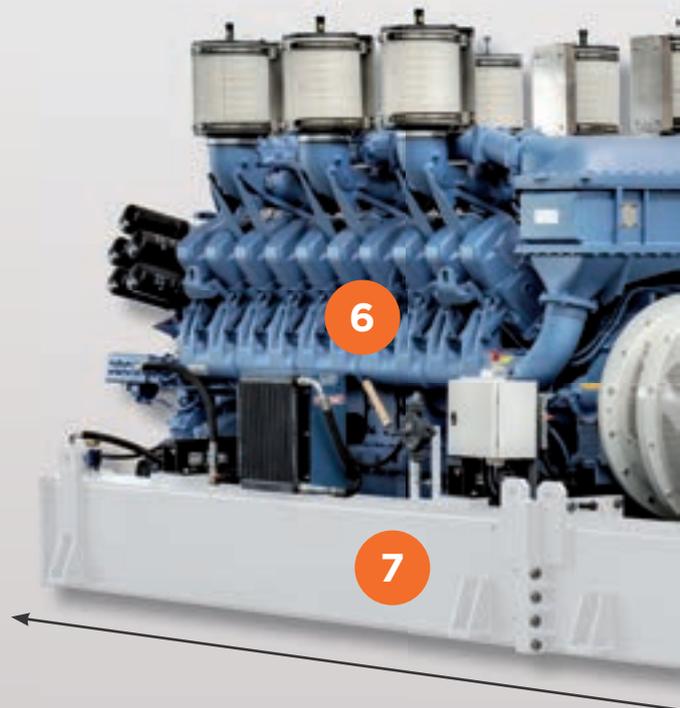
6 Emissions compliant diesel engine
Digital controlled, pre-heated and pre-lubricated diesel engine meeting TA-Luft and EPA exhaust emission standards, it guarantees a quick but soft start when needed, ensuring load availability.

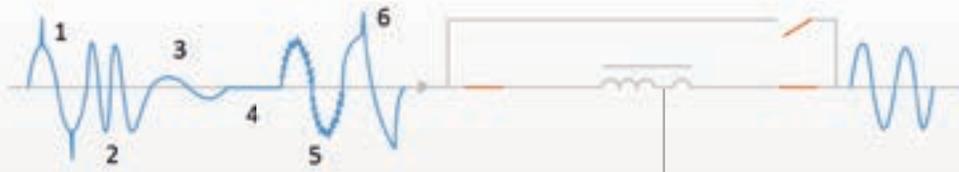
7 Split frame
Allows easier transport and lifting of the system. As an option, a daily fuel oil tank is integrated in the base frame to reduce the footprint of the system and simplify the installation.

8 Monobloc design
Easy and reliable on-site installation: all sections are directly coupled and automatically aligned.

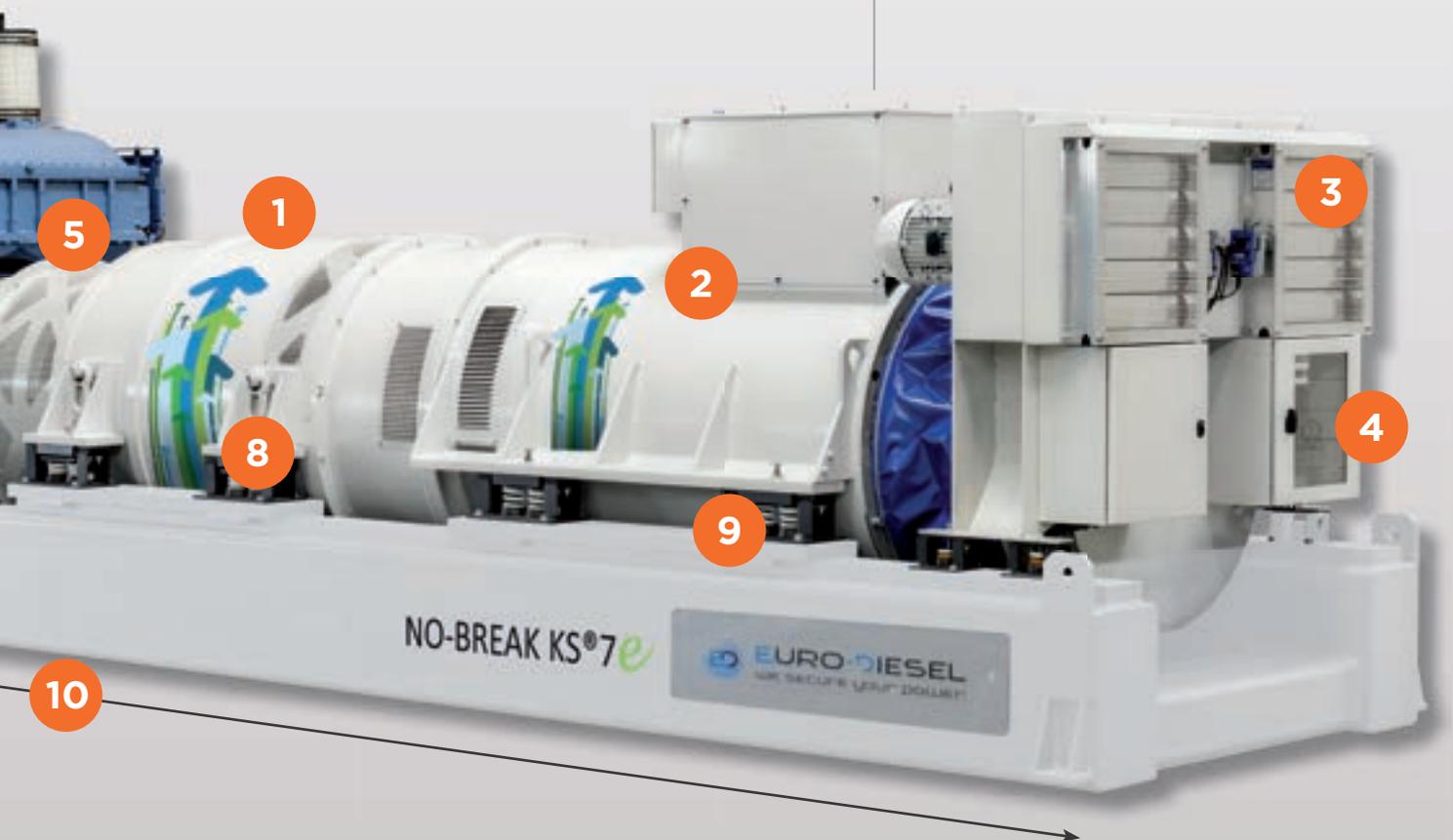
9 Seismically approved dampers
These dampers are finely tuned to eliminate eventual vibrations transmitted from the Stator-Alternator to the main baseframe and allow direct installation on the floor. They are designed to withstand a seismic rating of 1.39 G, in compliance with the International Building Code.

10 Smallest Footprint
The EURO-DIESEL KS7^e is the smallest footprint DRUPS in the world today, being 2 metres shorter in length than the competition resulting in smaller buildings, lower CAPEX and OPEX.





- | | |
|------------------------|---------------|
| 1. SPIKES | 4. OUTAGES |
| 2. FREQUENCY DEVIATION | 5. HARMONICS |
| 3. SAGS | 6. TRANSIENTS |



KS-VISION® Monitoring performance of your installation

The KS-VISION® control and monitoring system comes as a standard with the NO-BREAK KS®7e. Thanks to its user-friendly interface, it provides a whole set of functionalities essential to the optimal management of your backup power system.

The KS-VISION® control avoids the need for a Master Control Panel and **eliminates single points of failure**. Each unit is automatically tested and KS-VISION® informs the operator of the status of your system. It communicates, according to your preferences, any event to your own BMS or to EURO-DIESEL's technical support team, therefore maximizing the uptime of your data centre.

Dimensions

Length:	930 cm	366 in
Width:	200 cm	79 in
Height:	243 cm	96 in
Total weight:	37 tons	81600 lbs

Technical Specifications

UPS rating	at 50 Hz (cos ϕ : 0.8) at 60 Hz (cos ϕ : 0.8)	2750 kVA 3000 kVA
Dual output rating	at 50 Hz (cos ϕ : 0.8) at 60 Hz (cos ϕ : 0.8)	2750 kVA 3300 kVA
1. Acceptable mains tolerance in normal mode		
On frequency		$\pm 0.5 \%$
On voltage		$\pm 15 \%$
2. Voltage Regulation		
In steady state conditions		$\pm 1 \%$
For load variations	of 50% of 100%	$\pm 3 \%$ $\pm 5 \%$
On mains failure	when mains switches off when mains switches on	$\pm 5 \%$ $\pm 1 \%$
3. Frequency regulation in independent mode		
In steady state conditions		$\pm 0.2 \%$
For load variations	of 50%	$\pm 1 \text{ Hz}$
On mains failure	when mains switches off at 100 % load	$\pm 1 \text{ Hz}$
4. Efficiency		
Overall efficiency (conditioning mode)		up to 97%
5. Harmonics		
Total Harmonic distortion (THD)	$\leq 3 \%$ on linear load	
6. Short circuit current		
Upstream	limited to 3 times the rated current	
Downstream	up to 12 times the rated current	
7. Phase angle		
With balanced loads		$120^\circ \pm 0^\circ$
With 25% unbalanced loads		$120^\circ \pm 1^\circ$

EURO-DIESEL: committed to your success

EURO-DIESEL has installed over 1000 NO-BREAK KS® systems all over the world, protecting more than 1,000,000 kVA of mission critical applications. With our strategically located offices and worldwide network of partners, we can service you at moment's notice, wherever you are. Our service department is available around the clock, 365 days a year to help you guarantee your uninterruptible power supply.



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