



POWER. AT THE RIGHT MOMENT.

hitzinger

DYNAMIC DIESEL UPS
PURE SINE WAVE 24/7/365





SECURE UNINTERRUPTIBLE POWER, WITH A 25 YEAR SERVICE LIFE ... BATTERY-LESS DYNAMIC UPS!

Critical loads demand Uninterruptible power supplies with 24/7 resilience and availability, the load may change but the facilities are generally designed for 25 years and longer.

Dynamic diesel driven UPS are designed for 25 years continuous operation with offering significant life cycle saving over battery backed solutions including:

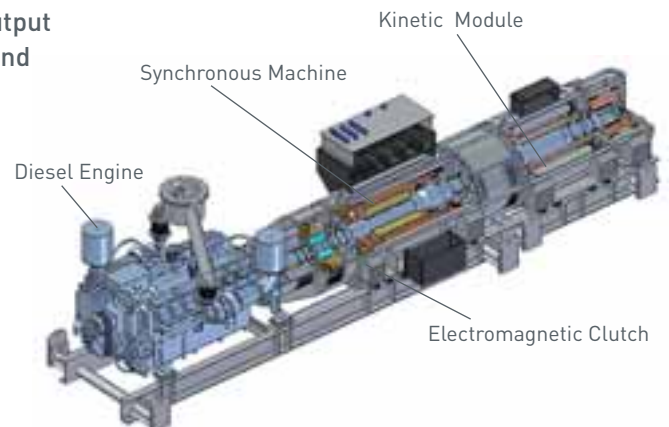
- 2 x Service life of static UPS
- Up to 2,3 MVA UPS Power from a single unit
- 10 year overhaul intervals
- Battery less
- High efficiency
- No input harmonic distortion
- Input Power factor > 0.98
- Unlimited Autonomy
- Exceptional Load handling
- No Environmental conditioning required
- Low maintenance costs

The HitZinger Dynamic Diesel UPS system comprises of four major components: diesel engine, generator, kinetic energy storage module and coupling choke. The kinetic energy module, generator and coupling choke work together to provide power conditioning and ride through energy for the UPS system, whilst the diesel engine provides the long-term back up for a mains failure.

The input stabilising filter system and energy store ensure the critical load receives a conditioned power supply whilst also providing power factor correction to near unity and bidirectional harmonic filtration for the utility.

The DDUPS can also be configured for dual output systems providing the flexibility of both UPS and Standby power within a single integrated unit offering yet further significant space saving advantages.

- 100kVA - 2.0MVA UPS module rating
- 100kVA - 2.3 MVA Dual Output rating
- Voltage Range up to 11kV
- High Efficiency up to 96%



HITZINGER. THE POWER COMPANY.



For the installation of a UPS system there are a number of Key factors for consideration:

- Ability to handle all loads.
- High reliability.
- Compact size to maximize revenue from Technical space.
- Consumer durable design.
- Minimal requirement for cooling.
- Service life.
- Whole life cost.

As a specialist in Uninterruptible Power and Standby Power, it is our commitment to customer service that allows us to fully understand the needs of our customers in all sectors that we operate, and to provide these customers with products and services tailored to their specific needs.

Critical loads demand exacting standards and innovative application of proven systems to assure the infrastructure integrity. Hitzinger Diesel Rotary Systems provide proven reliability and offer many advantages over the battery backed UPS and Standby Diesel including; maximising available plant room space, minimising running cost, eliminating UPS air conditioning requirements and addressing some of the technical issues presented by large static UPS installation such as harmonic filtration, poor input power factor, no inherent fault clearing capability and maintaining a controlled battery environment.

PROVIDING TOP-QUALITY SERVICE FOR UNINTERRUPTED SAFETY

Hitzinger is a company that never sleeps. Its "rapid response teams" are always there when you need them; they remedy any fault in your system and solve any problem you may have with it, anywhere around the globe.

Our expert maintenance guarantees operational reliability, resulting in long service life.



HITZINGER. THE SERVICE COMPANY.

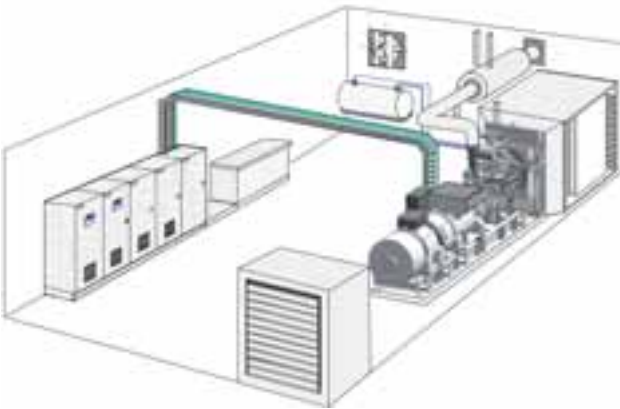


The reliability and quality of the public electricity supply is insufficient for growing numbers of consumers. Mains surges, sags and black outs can cause disruption, having serious consequences with loss of production/data/ reputation/revenue and even life.

DESIGN

- Indoor stationary installation
- Container solutions

TYPICAL DDUPS ROOM LAYOUT



APPLICATIONS

- Data centres
- Semi conductor production plants
- Telecommunication
- Airports
- Hospitals
- Food Processing plants
- Chemical Industry
- Plastics-technology
- Computer controlled Industrial plants etc.

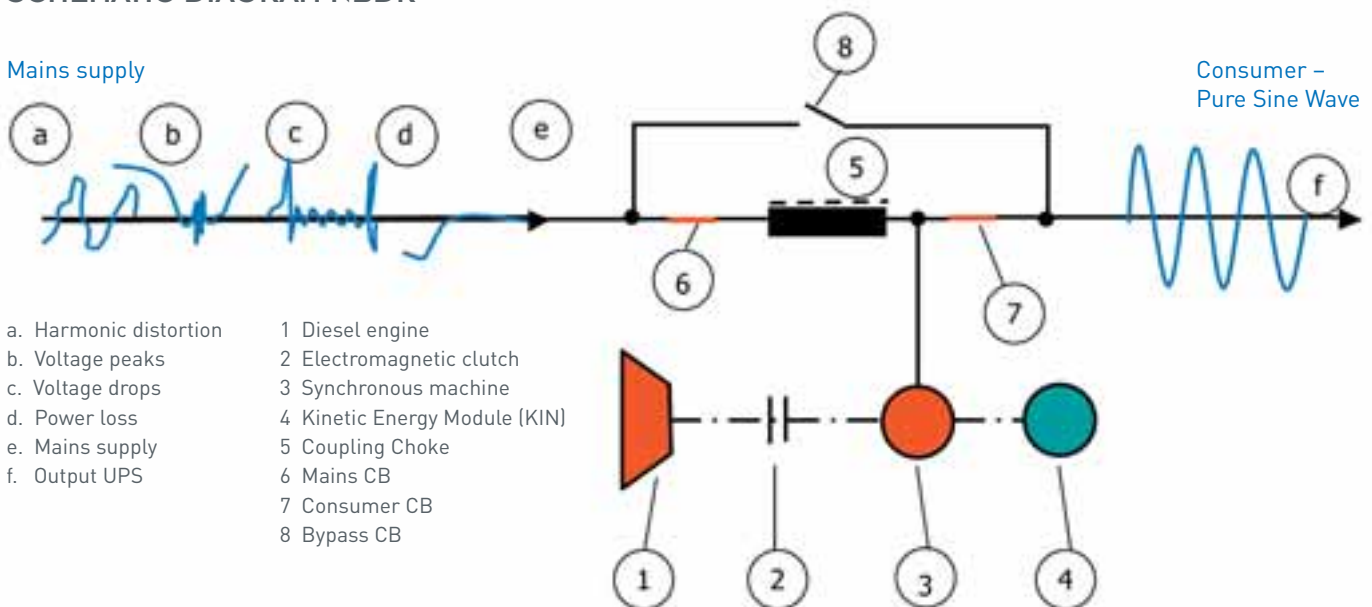
BENEFITS

- Power rating tailored to specific project requirements
- Support of consultants and preparation of specifications
- Turn key installations e.g. of all peripheral devices, such as tanks, ventilation, soundproofing system and exhaust system

SCHEMATIC DIAGRAM NBDK

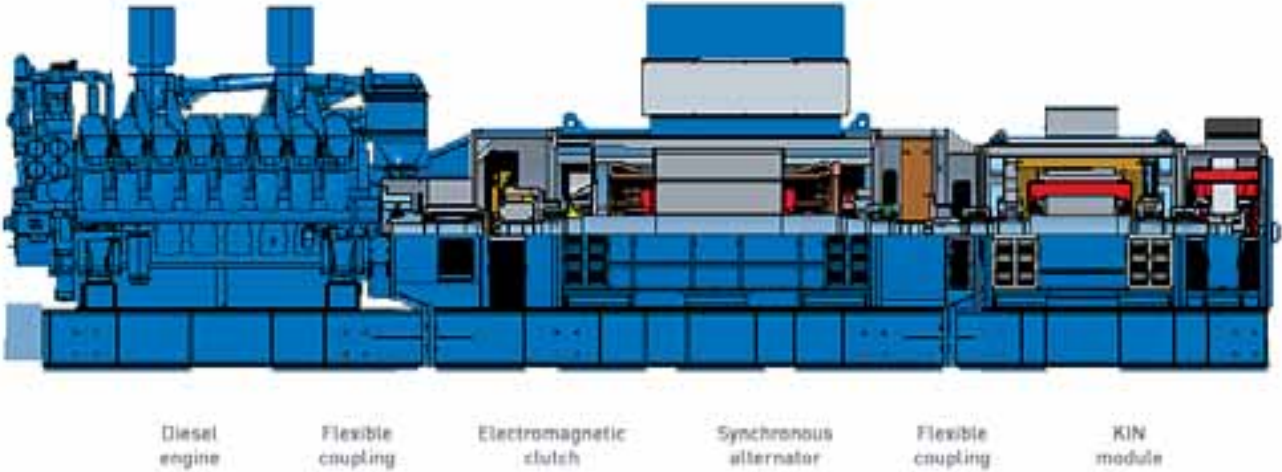
Mains supply

Consumer – Pure Sine Wave

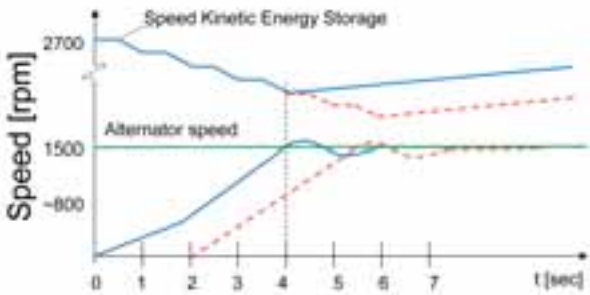


- | | |
|------------------------|-------------------------------|
| a. Harmonic distortion | 1 Diesel engine |
| b. Voltage peaks | 2 Electromagnetic clutch |
| c. Voltage drops | 3 Synchronous machine |
| d. Power loss | 4 Kinetic Energy Module (KIN) |
| e. Mains supply | 5 Coupling Choke |
| f. Output UPS | 6 Mains CB |
| | 7 Consumer CB |
| | 8 Bypass CB |

NBDK-SYSTEM



REDUNDANT DIESEL-ENGINE START-UP



Standard Starting Procedure:

- Diesel engine starts via electrical starter
- Electromagnetic clutch closes at ~800rpm
- Additional acceleration by KIN module

Redundant Starting Procedure:

- Electromagnetic clutch closes
- Diesel engine acceleration by KIN module to nominal speed

NBDK FEATURES

- Single UPS: up to 2.300 kVA
- Redundant starting System
- Black Start
- High choke quality
- High overload capacity
- Power factor improvement
- Optimum mains failure supervision
- Brushless design, no slip rings
- reduced plant room footprint

TOLERANCES DURING MAINS FAILURE

- Frequency: $\pm 1\%$
- Voltage: $\pm 10\%$

VERSATILITY IN AUTOMATION

Hitinger's Dynamic Diesel UPS Systems are very easy to control, while at the same time providing for all aspects of state-of-the-art industrial communication.

Hitinger's "Powercon" as the central control unit allows you to implement interfaces to the building control system, remote diagnosis through modem, malfunction monitoring by cellular, status logging with or without printer.

Hitinger offers a wide array of solutions, from simple supply units to complex systems.





NBDD-SYSTEM

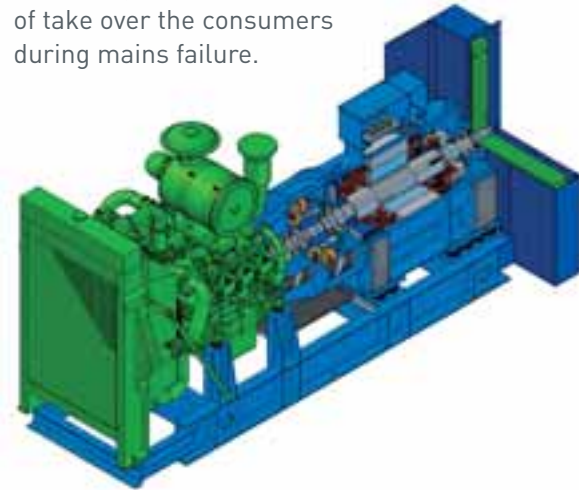
Similar to NBDK-system but instead of the electrical energy storage module (KIN) a rigid steel fly-wheel is directly mounted on the alternator shaft. Stored energy of the fly-wheel is used to bridge the time, till the diesel engine is able to supply of take over the consumers during mains failure.

NBDD FEATURES

- Power rating 100 - 1000 KVA
- Voltage up to 11 KV
- Input Frequency 50/60 Hz

TOLERANCES DURING MAINS FAILURE

- Frequency: $\pm 10\%$
- Voltage: $\pm 5\%$



NBAP-SYSTEM

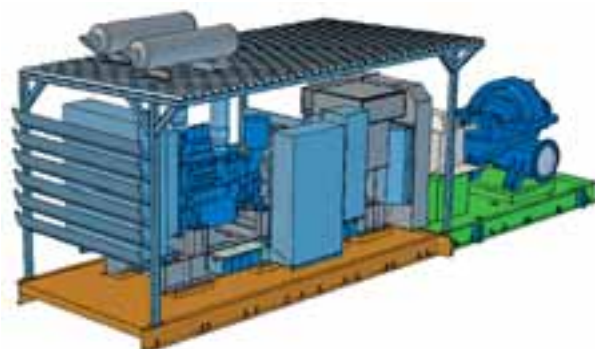
Similar design as NBDD System.
The unit directly drives a rotating machine e.g.a. pump and in case of mains failure the diesel engine starts and takes over the drive of the rotating machine.

NBAP FEATURES

- Power rating 50 - 800 KW
- Voltage up to 11 KV
- Input Frequency 50 / 60 Hz
- Rotating speed variation max. 5 %

APPLICATIONS

Mechanical uninterrupted power supply for pumps, ...





COMPANY REFERENCES



Selected list of references

Key customers	City	Country	Power
International Airport Cairo	Cairo	Egypt	2,8 MVA
Nelson Mandela Bay Stadium	Port Elisabeth	South Africa	2,2 MVA
Greenpoint Stadium	Capetown	South Africa	2 MVA
Telkom SA		South Africa	11,30 MVA
Bank of Tanzania		Tanzania	8 MVA
International Airport Cancun	Cancun	Mexico	290 kVA
Venefoil C.A.	Caracas	Venezuela	1 MVA
LDK PV Silicon Technology Co. Ltd.	Jiangxi	China	9,78 MVA
Bank Negara	Kuala Lumpur	Malaysia	2,6 MVA
Infineon	Kulim	Malaysia	12 MVA
1st Silicon/X-FAB	Kuching	Malaysia	6 MVA
STMicroelectronics		Singapore	7,6 MVA
Siltronics Samsung Pte. Ltd.		Singapore	2 MVA
Government Data Center		Great Britain	5,9 MVA
Global Switch	London	Great Britain	22 MVA
STMicroelectronics	Catania	Italy	5,25 MVA
Austrian Hospitals		Austria	9,35 MVA
Austrian Railways		Austria	1,1 MVA
Data Center Bern	Bern	Switzerland	6 MVA



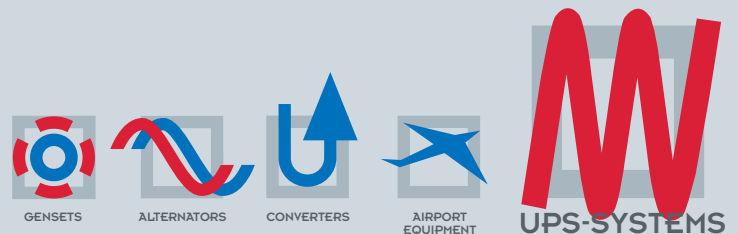
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THE POWER COMPANY.

hitZinger

POWER FOR THE WORLD.

HitZinger high quality UPS Systems ensure that hospitals, airport, data centers, banks, industrial plants, etc. have never costly power outages, not even for milliseconds.



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