

14 - Dynamic UPS & Power Solutions

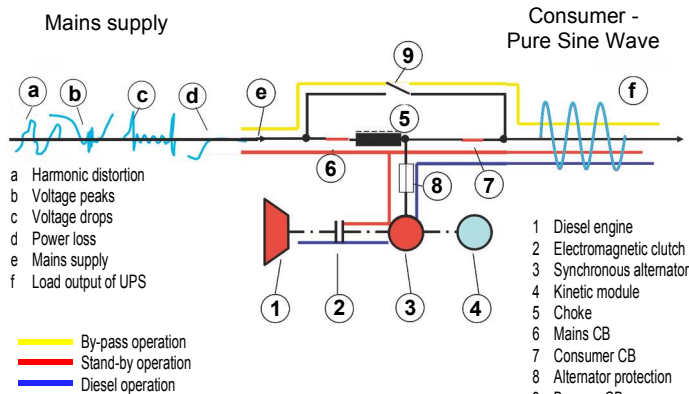
Hitzinger

Hitzinger is an independent privately owned company founded in 1946, based in Linz, Austria, operating from over 30 worldwide locations, producing tailored power solutions from our core business of rotating electrical machines.

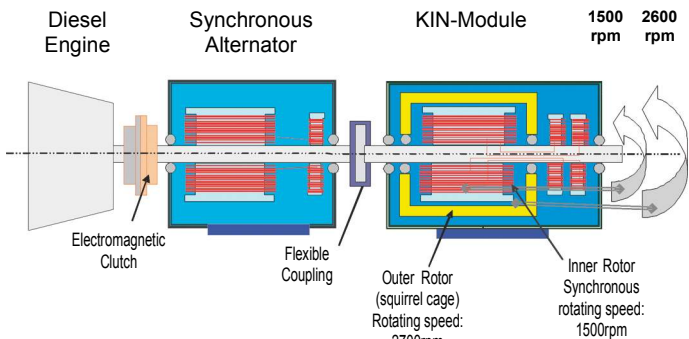
Battery-less Dynamic Diesel UPS

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 backup for a mains failure.

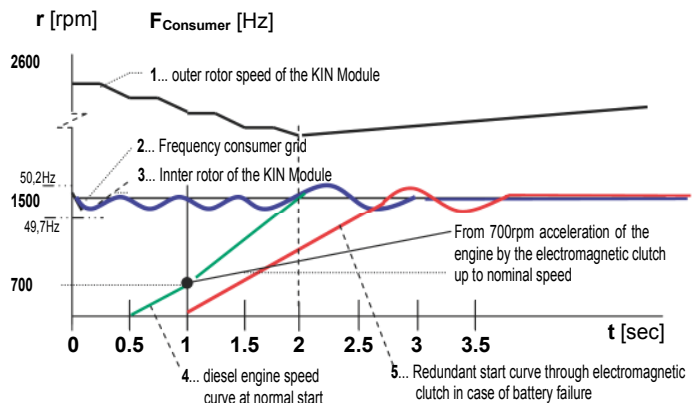
The input stabilising filter system and energy store ensure the critical load receives a conditioned power supply whilst also providing power factor correction to near unity and bidirectional harmonics filtration for the utility. The security of supply is also the consideration of effects from other users or indeed, the effects from faults and dirty loads within the mains distribution, the purpose of the Hitzinger DRUPS is to guarantee the supply within tolerance and to protect against the poor input supply and generate a high quality output.



At standby of the system the KIN flywheel is kept at approximately double the speed of the inner rotor by means of a small induction motor, this can be called charged if compared to a battery. In case of an emergency, the energy stored within the KIN flywheel is transferred to the rotor by using a controlled electromagnetic field which will build up between the flywheel and the shaft by injecting a controlled DC current in the winding of the rotor. The electromagnetic field produces a torque being built up between the flywheel and rotor resulting in energy transfer from the flywheel towards the rotor in order to maintain a constant speed of 1500rpm.



The diesel engine is then started by the starters and at a speed of 700 rpm the electromagnetic clutch is energized, accelerating the diesel engine to nominal speed within 1,5 to 2,5 seconds. After another 2 to 3 seconds the full load is supported by the Hitzinger DDUPS System running in diesel operation.



In the event the diesel engine starters fails to start from any reason the electro magnetic clutch closes immediately and within 1.5 seconds the engine will be brought to nominal speed (1500rpm) by the released energy of the KINETC Module via high speed start. These redundant starting systems guarantee the diesel engine will be started insuring uninterrupted power availability for the critical loads driven by the kinetic energy of the KIN Module within guaranteed tolerances.

Secure Uninterruptible Power, with a 25 Year Service Life...

Dynamic diesel driven UPS are designed and proven for 25 years continuous operation and offer significant life saving over battery backed solutions including:

- >2x Service life of Static UPS
- Up to 2.5MVA UPS power from a single unit
- Voltage range up to 11kV
- 10 year overhaul intervals
- Battery less system with no additional A/C
- High Efficiency
- No input harmonic distortion
- >0.98 Input Power Factor
- Unlimited Autonomy
- Exceptional load handling
- No environmental conditioning required
- Dual output from 300kVA to 2.5MVA for both UPS & non-essential loads

Rotary Diesel UPS vs. Battery Backed with Additional Standby Diesel Generator

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 generator including; maximising available plant room space, minimizing running costs, eliminating UPS air conditioning requirements and addressing some of the technical issues presented by large static UPS installations such as harmonic filtration, poor input power factor, no inherent fault clearing capability and maintaining a controlled battery environment.

ISO 9001:2008 Certified Quality



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