



The combined NBDD system was developed by HITZINGER to supply both UPS load and EPS load with just one genset.

This system supplies without any loss of quality both the critical consumer within the specified tolerances and the consumer during emergency power operation.

Functional description

During grid operation (Stand By operation) the consumer are supplied via the choke by the grid.

The necessary energy is stored in the flywheel. Choke and alternator operate as a stabilizing voltage filter and supply the consumer with clean energy and reactive load. The non-critical emergency power consumer are supplied directly from the grid. At grid failure the grid-power-switch opens and the UPS load is basically supplied without any interruption with the energy which is stored in the flywheel.

The electromagnetic clutch is shutted with over excitement and starts the diesel engine.

After a short time the nominal speed of the diesel engine is reached and the diesel takes over the the supply of the UPS load. (Frequency notch < 5%) and the storage of energy of the flywheel. When this has happened (after 10 - 12 seconds) also the emergency power consumer are switched on.

Technical Data

UPS operation:

Voltage

Static: +/-1%

Dynamic:

- at change of nominal load, $\cos\phi = 0,8$; -10%, +10%, voltage comeback within 0,3 seconds.
- Short circuit at the input +/-10%. Voltage tolerance after short circuit shut down <10% within: 0,3 seconds.
- Mains shutdown at nominal voltage +/-10% within 0,3 seconds

Frequenz:

- at grid operation = grid frequency.
- change grid to diesel operation at takeover of 100 % load +/-5%.
- static at diesel operation +/-0,5%.

Emergency power operation:

Switching of the emergency power consumer within 10 - 12 sec.