

# GenTrans

## Load Monitor and Generator Control System

- Is your business being affected by lack of electrical power?
- Is the cost of upgrading the power prohibitive?
- Is the power infrastructure unable to support an increase in power to the site in the medium to long term even though the cost can be covered?
- If your business is held back because of a shortage of electrical power Powerguard has the answer.



Powerguard is an experienced power engineering company and will be able to help.

**Call: 01507 600 688 for more information or to arrange a meeting to discuss a solution to your problem.**

The Powerguard GenTrans is designed and manufactured to solve the problems caused by a shortage of electrical power.

GenTrans controls one or two generators. The incoming electricity supply is monitored and if an overload is going to occur a generator will be started and part of the load transferred from the mains supply to the generator. When the load reduces the load is transferred back to the mains supply and the generator is shut down. This is fully automatic and will result in the generator running for the minimum period.

Two generators are used to provide backup to the whole site in the event of a mains power failure. Two generators add extra flexibility to the system.

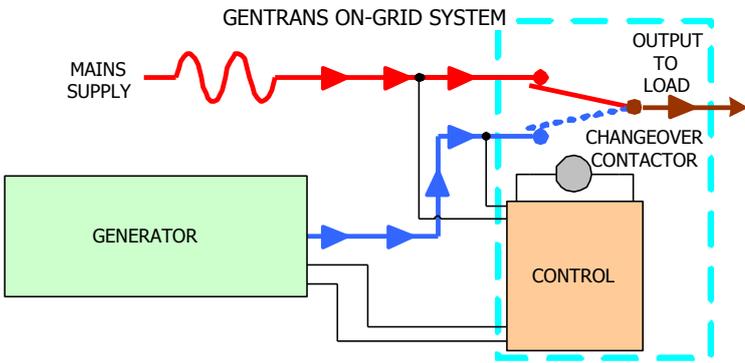
GenTrans is a cost effective solution in applications where the peak demand is more than the mains supply can provide.

**powerguard**

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GenTrans is also an efficient standby power system starting the generator and transferring part or all of the load when the main supply fails. When the mains is restored and the load is stable it will be transferred back and the generator stopped.

## Generator and Mains Supply



For example if the peak load on a site is 150A and the available mains supply is 100A. This will cause problems with the incoming mains fuses failing and the site shutting down.

The solution is to have a generator capable of supplying part - more than 50 Amps - or all of the peak load of 150 Amps.

The sketch on the left shows a typical layout for the mains input, generator and a GenTrans system.

When the load is normal the mains supply feeds the load via the changeover contactor - path shown in red.

When the system predicts that the mains supply is going to be overloaded the generator is started and part or all of the load is transferred by the changeover contactor - path shown in blue.

The process is reversed when the load reduces to within the rating of the mains supply.

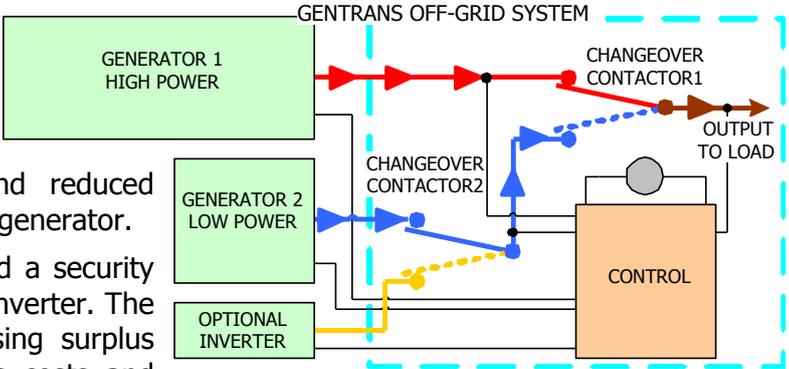
The peak load may only happen intermittently for relatively short periods during the day. GenTrans monitors the load and also the trend of how the load is varying. Overloads are predicted and the load is transferred before they occur.

## Large Generator and Small Generator + Inverter

An example of a typical off-grid GenTrans controlling two generators to power a site with no mains supply available is as follows:

In this example a 100kVA generator is used for the heavy load and a 20kVA for the lighter load. The 20kVA generator is much more efficient than the 100kVA generator operating below 20% capacity, and fuel savings and reduced operating costs will quickly pay for the second generator.

If the night time load is only a few lights and a security system it can be powered by batteries via an inverter. The batteries are charged up during the day using surplus power. This increases efficiency and reduces costs and maintenance and also avoids any problems meeting noise regulations at night.



GenTrans is ideal for any application that requires a high peak load for part of the operating period.

The Powerguard GenTrans controls the power system automatically switching the load between the two generators as required.

The sketch above shows a typical layout for two generators and a GenTrans system.

When the load is high Generator 1 is started and the power goes to the load via the changeover contactor - path shown in red.

Generator 2 is started when the load falls within its rating. The load is transferred by the changeover contactor - path shown in blue. Generator 1 is then shut down. The process is reversed when the load is predicted to increase beyond the rating of Generator 2.

The inverter option is shown in yellow.