

What is a micro turbine generator?

The micro turbine generator is characterized by high efficiency, low pollution, low cost and modular design. The micro turbine generator power system comprises a gas turbine engine with a high speed electrical generator to provide power of 200kw and to have overall efficiency more than 78% by design of exhaust heat recovery systems.

How efficient is a microturbine?

Microturbines can achieve overall efficiency levels of up to 80 percent in combined heat and power (CHP) applications and up to 90 percent in combined cooling, heat and power (CCHP) applications. Electric vehicles are clean and efficient, but limited in the distance they can travel between battery charges.

What are the components of a microturbine?

They evolved from automotive and truck turbochargers, auxiliary power units (APUs) for airplanes, and small jet engines. Most microturbines are comprised of a compressor, combustor, turbine, alternator, recuperator (a device that captures waste heat to improve the efficiency of the compressor stage), and generator.

What is a microturbine (Mt)?

A microturbine (MT) is a small gas turbine with similar cycles and components to a heavy gas turbine. The MT power-to-weight ratio is better than a heavy gas turbine because the reduction of turbine diameters causes an increase in shaft rotational speed.

Are microturbines better than reciprocating engine generators?

Microturbine systems have many advantages over reciprocating engine generators, such as higher power density (with respect to footprint and weight), extremely low emissions and few, or just one, moving part. Those designed with foil bearings and air-cooling operate without oil, coolants or other hazardous materials.

What is a microturbine used for?

Microturbines can be used for cogeneration and distributed generation as turbo alternators or turbogenerators, or to power hybrid electric vehicles.

By integrating an innovative turbine engine, magnetic generator, advanced power electronics, and patented air bearing technology, Capstone microturbines continue to define the standard for clean and reliable energy solutions.

From the design phase through to production, every component of the microturbine is well thought out and designed for maximum performance. This includes computer-aided design (CAD), analytical calculations and numerical simulations (FEM and CFD) as well as efficiency optimization of each component.

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A mathematical model of a microturbine generator system includes electromechanical sub-system, power electronic converter, filters, interface transformer, local load, distribution ...

Advances in electronics allows unattended operation and electronic power switching technology eliminates the need for the generator to be synchronised with the power grid, allowing it to be ...

GAMA uses special gasification technology to convert organic waste resources into syngas (RDF-7) with high energy conversion efficiency in Refuse derived fuel, which is then converted into ...

The microturbine generator mainly features low emissions, multi-fuel capability, compact size, high reliability and low maintenance, and the recuperator is further used to improve the overall efficiency of the generation system.

The system can be operated by gas and liquid fuels and used for energy efficiency for industrial boilers, biogas-fueled renewable energy, islanding energy and can be integrated with microgrid systems to enhance ...

1 ??&#0183; Since the Stirling engine drove an electric generator, the system's electric power, EP, can be calculated by multiplying the generator's current by its voltage. The circuit of the charge controller performed this calculation, and the value of electric power was displaced on a small window on the controller's panel. ... Taiwan, under the grant ...

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