M1000

by Mitis

GRID

World First Flameless Combustion Micro Gas Turbine

Truly Multi Fuel

Compatible with various hydro-carbon gaseous, liquid and mix-tures fuels, hydrogen ready

Ultra Low Emissions

Ultra- Low NOx thanks to flameless combustion. Oxygen rich exhaust

Combined Heat & Power

Maximum fuel conversion effi-ciency with combined heat and power, and cooling.

Low Maintenance

Oil-free operation thanks to aerodynamic air foil bearings

Applications

CHP for Industry

Industrial CHP with M1000 delivers reliable, low-maintenance power and heat with ultra-low emissions, high fuel flexibility, and compact, efficient operation.

Biogas

Biogas from wastewater, landfill, or large plants can be efficiently converted with M1000 micro gas turbines, enabling robust, low-emission power generation from variable and challenging gas streams.

Flare Gas

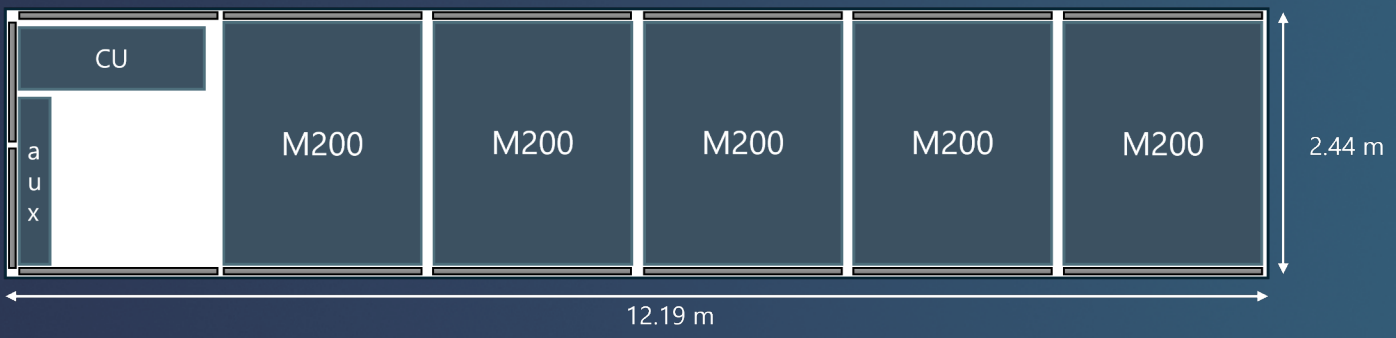
M1000 produces electricity and heat for local infrastructure from flare and complex gas mixtures, using flameless combustion to deliver ultra-low emissions—ideal for remote oil fields and industrial off-gas.

Hybrid energy Systems

Hybrid energy systems combine M1000 with renewables to provide reliable, low-carbon power, ensuring stability while reducing fuel use and emissions.

M1000 Microturbine

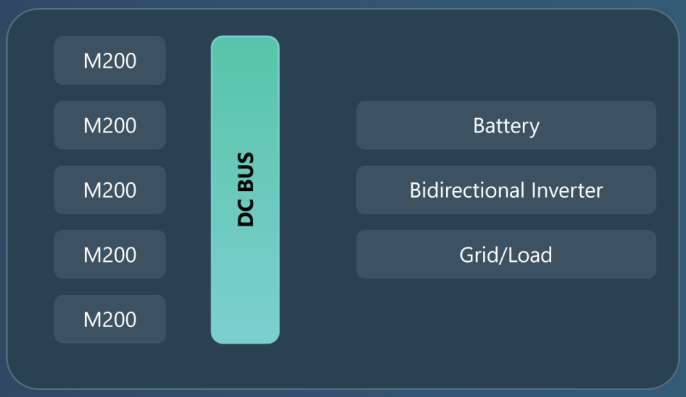
Preliminary top view



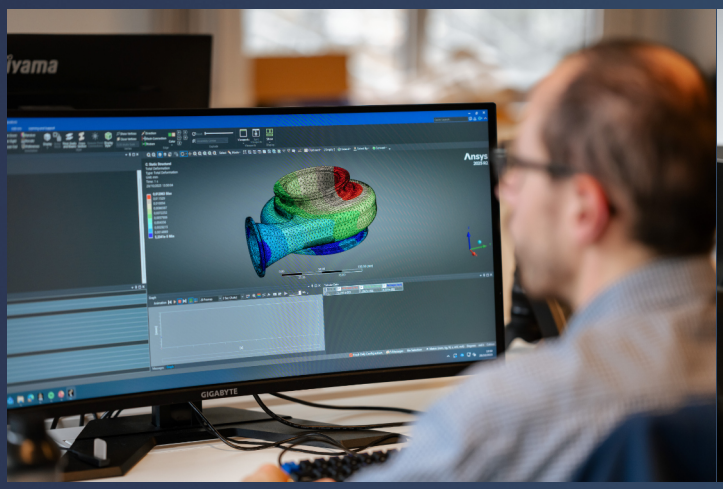
The M1000 integrates five 200 kW microturbines (M200) operating on a shared DC bus, enabling a single inverter for simplified and flexible grid connection.

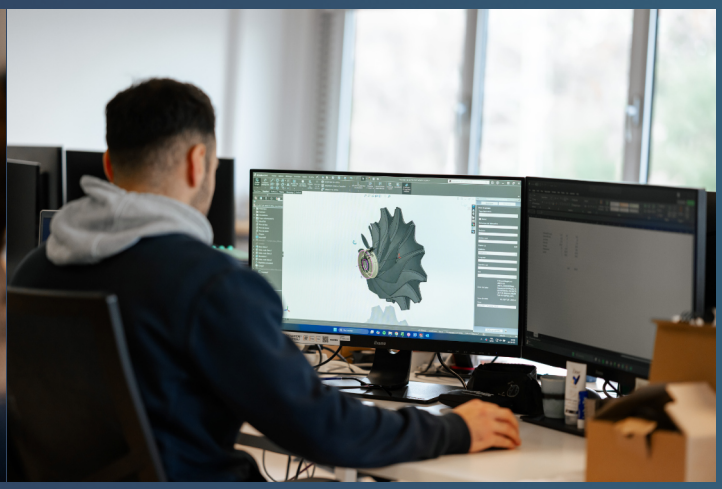
It features MITIS' patented flameless combustion technology, ensuring multi-fuel capability, including low-calorific and complex gases, while delivering ultra-low NOx emissions.

Equipped with MITIS' air foil bearing technology, the system operates fully oil-free, reducing complexity, maintenance, and operating costs while enhancing reliability.



Engineered with Advanced Modelling & Simulation





Specifications

M1000 System:

Type	Recuperated Micro Gas Turbine
Engine	Variable high speed gas turbine (up to 60,000 RPM)
Operation	Continuous
Lubrification	Air foil bearings
Cooling	Water cooling for power electronics
Service	12,000 hours
Communication	dry contacts / ethernet / usb / (option : other communication)

Output:

Electric power	[kVA]	1000
Output Voltage On-Grid	[V]	Automatic
Output Voltage Off-Grid	[V]	400, 480 (3P + N (selectable))
Frequency Off-Grid	[Hz]	50 or 60

(1) Natural Gas

Fuel and Emissions:

Fuel types		Natural gas, LPG, biogas, low LHV gas, flare gas, liquid fuels, H2/NG mix, etc
Air flow	[kg/s]	~ 7,5
NOx at 15% 02 (1)	[ppmvd]	< 20
CO at 15%02 (1)	[ppmvd]	< 15
Exhaust flow Temperature	[°C]	~280

Operating Conditions:

Sound Pressure Level (at 1 m)	[dB]	~70
Ambient temperature	[°C]	-20 to +40
Operating Altitude	[m]	0 - 2000
Relative humidity	[%]	0 - 100
Envelope protection rating		IP24 (standard)
Soundproof Canopy		Tropicalized C5 200 micron
Fire protection	[min]	30

Dimensions & Weight:

Width	[cm]	244
Length	[cm]	1200
Height	[cm]	259
Weight	[kg]	< 20000

Disclaimer: All specifications, performance data, and dimensions are indicative and subject to change without notice as part of ongoing product development.