

World First Flameless Combustion Micro Gas Turbine



Truly Multi Fuel

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



Ultra Low Emissions

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



Combined Heat & Power

Maximum fuel conversion efficiency with combined heat and power, and cooling.



Low Maintenance

Oil-free operation thanks to aerodynamic air foil bearings

Applications



Flare Gas

M10 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.



Biogas

Biogas from wastewater, landfill, or farming digesters can be efficiently converted with M10 micro gas turbines, enabling robust, low-emission power generation from variable and challenging gas streams.



CHP for Building

M10 provides efficient on-site electricity and heat generation in a low-maintenance unit. Its ultra-low NOx emissions and fuel flexibility make it ideal for low-carbon building energy systems.



Hybrid energy Systems

Hybrid energy systems combine M10 with renewables to provide reliable, low-carbon power, ensuring stability while reducing fuel use and emissions.

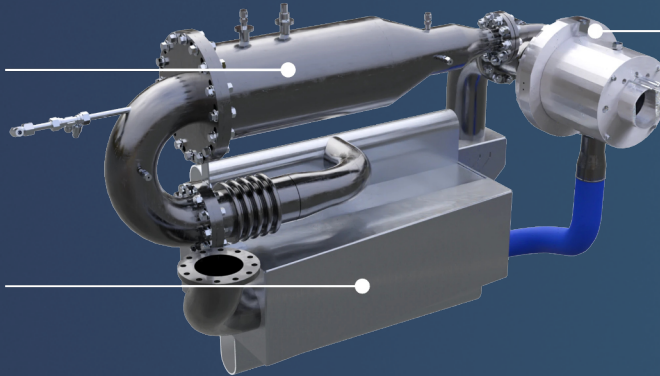
M10 core engine

FLAMELESS COMBUSTION

Low emissions (NOx), multi-fuel

HIGH-TEMP RECUPERATOR

Diffusion bonded, high corrosion resistance, thermal shock resistant, low cost design



ULTRA COMPACT TURBOGENERATOR WITH AIR FOIL BEARINGS

Simple, robust, low maintenance

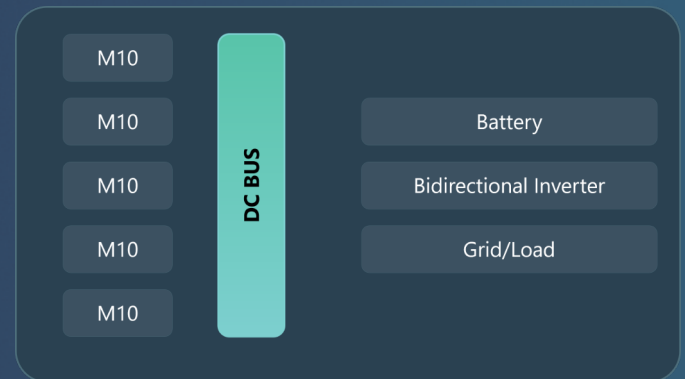
POWER CONVERSION WITH SIC MOSFET AC/DC

Novel speed and angle sensor, high frequency

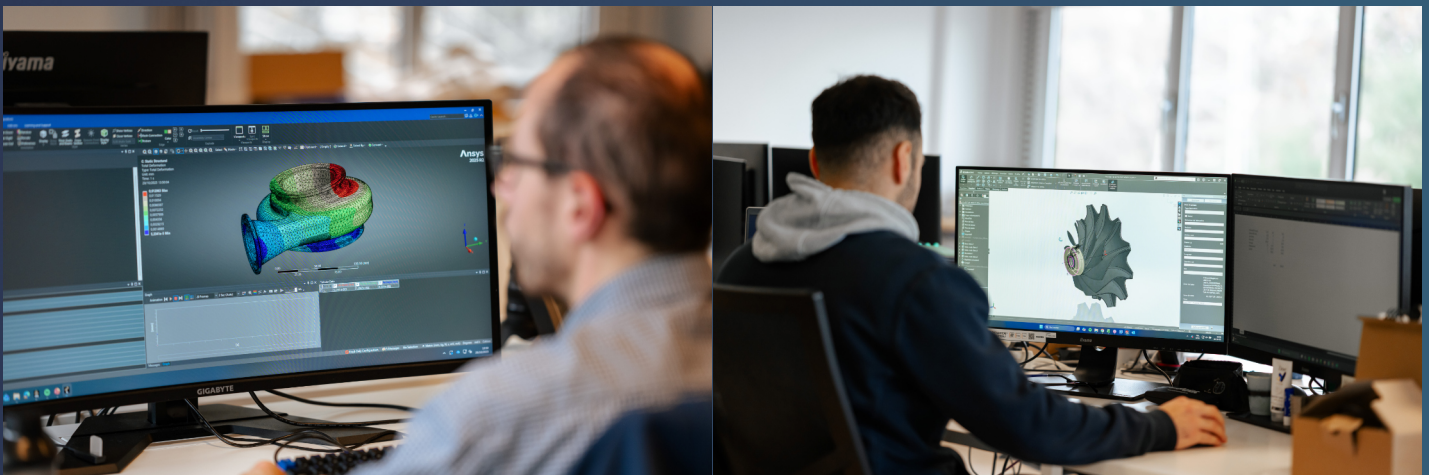
The M10 integrates a patented compact turbogenerator equipped with MITIS air foil bearing technology, the system operates fully oil-free, reducing complexity, maintenance, and operating costs while enhancing reliability.

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

Multiple M10 can also be combined together on the DC bus side to produce more powerful systems.



Engineered with Advanced Modelling & Simulation



Specifications

M1000 System:

Type	Recuperated Micro Gas Turbine
Engine	Variable high speed gas turbine (up to 110,000 RPM)
Operation	Continuous
Lubrication	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]	10
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]	~ 0,16
NOx at 15% O ₂ (1)	[ppmvd]	< 20
CO at 15%O ₂ (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 (optional)	Tropicalized C5 200 micron	
Fire protection (optional)	[min]	30

Dimensions & Weight:

Width	[cm]	80
Length	[cm]	140
Height	[cm]	170
Weight	[kg]	< 500

Featuring modularity

- **M10 CORE KIT** contains the flameless combustor, recuperator, turbogenerator, bi-directional high frequency converter and control electronics. Ideal for integrators interested to assemble their own system
- **M10 AC** is a fully functional machine combining the M10 CORE KIT with a DC to AC converter for grid connected system. M10 AC includes a soundproof canopy and all necessary auxiliaries but the fuel supply system (see below) to operate the micro gas turbine engine.
- **M10 DC** is similar to M10 AC but with a DC/DC converter for those wishing to connect multiple M10 together to produce more power or to integrate their own battery and grid inverter.
- **M10 LOW PGSCU** features the gas compression skid for M10. It takes gas at ambient pressure for supplying to the flameless combustor.
- **M10 HIGH PGSCU** integrates a control valve for direct gas supply to the flameless combustor. Input gas pressure must lower than 5 barg.
- **M10 LIQUID SCU** is the liquid fuel supply and control fuel unit for the flameless combustor including the atomizer system for liquid injection in the flameless combustor.
- **M10 CHP SS** is an optional stainless heat exchanger for cogeneration.
- **M10 EXHAUST BYPASS** can be used in combination with M10 CHP SS to allow exhaust fumes to bypass the cogeneration heat exchanger.
- **M10 LABVIEW** provides access to our LABVIEW performance code allowing users to fully monitor and control M10. (subject to special software access terms)
- **M10 SENSORS LAB** includes several additional themocouples, pressure sensors and air mass flow controller for research purpose.

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