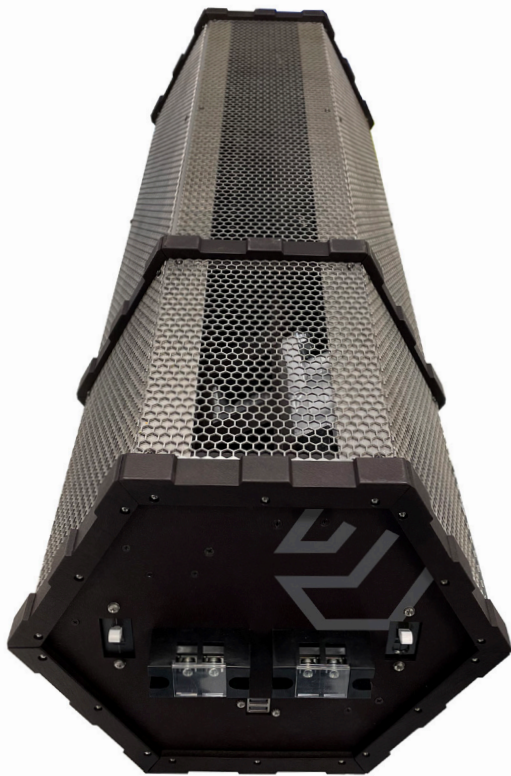


DIGI-TRONIC



The High-Temperature Fuel Cell System for the Future of Transportation

Multi-fuel Capability

Handling low- or zero-carbon fuel instead of ultra-pure hydrogen as needed by LT-PEM competitors

Superior Thermal Management

Operating at 80°C-240°C

Scalable Design

Can fit small- to large-power generation needs (50W to 1MW)

EVOLVING
TECH

 **ADVENT**

www.advent.energy

Advent's clean and efficient fuel cell systems replace polluting and noisy internal combustion engines, and are fueled by renewable zero-emission fuels such as green hydrogen and e-methanol

MULTI-FUEL

DIGI-TRONIC is a hydrogen-based fuel cell system that can use compressed green hydrogen, low-purity hydrogen (blue or LOHC), methanol (with focus on biomethanol and e-methanol as the fuels of choice), renewable natural gas, and future eFuels.

In other words, at Advent [we can deploy massively today before the high CAPEX green hydrogen infrastructure is available globally.](#)

RESILIENCE

DIGI-TRONIC operates at temperatures of -38°C to 58°C and in extremely humid or dry conditions.

The DIGI-TRONIC system is also resilient to any input impurities (hydrogen impurity, air impurity that will "kill" most PEM fuel cells); and [the MEA does not dry out in the desert, nor freeze in the arctic.](#)

LIGHTWEIGHT - SIMPLICITY

DIGI-TRONIC has [superior weight advantages](#) against most other solutions without the need for a large cooling system, water management subsystems or fuel storage.

REDUNDANCY

DIGI-TRONIC has a [patented thermal management and control design that is self-healing](#), providing optimal cell performance. This allows for a longer lifetime and lower Total Cost of Ownership (TCO).

HIGH VOLTAGE

High-voltage (up to 400V per 15kW fuel cell unit) low current operation is ideal for transportation applications (trucks, buses) and [facilitates reliable power at scale.](#)



NOT WATER BASED

Advent's membrane technology is not water based. This allows it to currently operate from 80°C to 200°C. Advent's next generation HT-PEM technology will be based on [ion-pair membrane which will allow the system to operate at temperatures up to 240°C.](#)

SUPERIOR HEAT MANAGEMENT

DIGI-TRONIC offers superior thermal management required by transportation industry applications, due to the high-temperature (80°C to 240°C) operation of Advent's proprietary HT-PEM MEA.

The DIGI-TRONIC system [eliminates the need for large radiators and complex workaround solutions](#) that are currently required by typical LT-PEM fuel cells, and allows for extended operation at peak power in high ambient temperatures.

DESIGN MODULARITY

DIGI-TRONIC is developed with an architecture that can be [massively scaled from 50W to 1MW](#) with the same modular design.

TCO

[Simplicity and compact design enable a lower CAPEX](#) (compared to LT-PEM competitors). Additionally, resilience to extreme temperatures, pollution, and humidity leads to a longer lifetime and a lower OPEX (compared to LT-PEM competitors).

EFFICIENCY

[System net efficiency will be demonstrated at 45%.](#) However, the next generation DIGI-TRONIC will have 2-phase cooling that also generates high pressures, providing an additional power and efficiency boost (an 18 %increase power with system efficiency >60%)