HYUNDAI

HTWO
FUEL CELL
HYUNDAI MOTOR GROUP

HTWO
Hydrogen Fuel Cell
Business Solutions

HTWO
Fuel Cell Business

HTWO offers comprehensive solutions to facilitate the broad adoption of high-quality and dependable fuel cell technology, ranging from hydrogen electric vehicles to various industrial applications.

R&D Legacy

Hyundai Motor Company has pioneered hydrogen mobility through nearly 30 years of research and development into fuel cell technology, starting in 1998. As a result, it has achieved numerous milestones, including the world's first mass-produced hydrogen-electric passenger vehicle in 2013 and its first mass-produced hydrogen heavy-duty truck in 2020, ushering in the era of hydrogen mobility.

Automotive-proven Solution

Hyundai Motor Company's hydrogen-electric vehicles are already running on roads worldwide (Cumulative sales in 2024: over 40,000 passenger vehicles, over 2,000 commercial vehicles). The high-quality and reliable fuel cell technology developed for automobiles can now be found in various fields beyond mobility.

Comprehensive Tech-support

HTWO provides extensive technical support services, from system applications to testing operations. HTWO specialists assist with local system installation, testing, inspections, and developing customized hardware and software modifications.

Mass Production Capability

The HTWO fuel cell system's production facility utilizes the large-scale mass production equipment of Hyundai's vehicle fuel cell system. System production and supply, conducted with strict quality control, reliably support the manufacture of customer products during the commercialization stage.

HTWO
Fuel Cell Solutions

Engine-type Fuel Cell System

The new engine-type fuel cell system is a product developed based on fuel cell system of XCIENT heavy-duty truck, equipped with improved power density, optimized driving technology, and enhanced customer convenience such as interface and communication environment.

Performance

- Output: 94 kW $_{net}$ @BOL
- Min. Output: 30 kW $_{net}$
- Voltage: PMC $_{out}$: 250~450 V | FDC $_{out}$ (Supplied) : 450~828 V
- Current: 360 A
- Efficiency: Max 61.7 %

Specification

- Size: 651 x 888 x 718 mm (L x W x H)
- Weight: 181 kg
- Volume: 415 L
- IP Rating: IP67 / IP69K

Operating Environment

- Environment Temperature: -30 ~ 50 ℃
- Hydrogen Quality: ISO 14687-2 / SAE J2719
- Hydrogen Pressure: 18 bara ± 1.5 bar
- Supply Voltage: PMC : 12 V DC / FDC : 12-24 V DC
- Communication: HS CAN (2.0 B 500 kbit/s, extended ID)

Utilization

- Light Commercial Vehicle, Passenger Car
- Medium-duty Truck, Heavy-duty Truck, Special-purpose Vehicle
- City Bus, Intercity Bus
- Power Generator

Flat-type Fuel Cell System

The flat system configuration reduces the height of our fuel cell technology through repackaging of the balance of plant. It can be used in applications where there are height restrictions on packaging.

Performance

- Output: 94 kW $_{net}$ @BOL
- Min. Output: 30 kW $_{net}$
- Voltage: PMC $_{out}$: 250~450 V | FDC $_{out}$ (Supplied) : 450~828 V
- Current: 360 A
- Efficiency: Max 61.7 %

Specification

- Size: 680 x 1,188 x 502 mm (L x W x H)
- Weight: 195 kg
- Volume: 405 L
- IP Rating: IP69K

Operating Environment

- Environment Temperature: -30 ~ 50 ℃
- Hydrogen Quality: ISO 14687-2 / SAE J2719
- Hydrogen Pressure: 18 bara ± 1.5 bar
- Supply Voltage: PMC : 12 V DC / FDC : 12-24 V DC
- Communication: HS CAN (2.0 B 500 kbit/s, extended ID)

Utilization

- Rolling Stock (Tram, Train, etc.)
- Medium-duty Truck, Heavy-duty Truck, Special-purpose Vehicle
- City Bus, Intercity Bus
- Power Generator

* The images shown are for illustration purposes only and may not be an exact representation of the actual product.

Fuel Cell Power Pack

The power pack is a fully integrated fuel cell system, including batteries, hydrogen tanks and controls for effortless conversion of equipment.

Performance

Max. Output: 30 kW net
(Peak 60 kW net for 5sec, depending on load profile)
Rated Output: 20 kW net
Voltage: 80 V DC
Efficiency: 54.4% (LHV) @ Rated Power

Specification

Size: 1,030 x 855 x 780 mm (L x W x H)
Weight: 964 kg
Battery Capacity: 4.0 kWh
IP Rating: IP24

Operating Environment

Environment Temperature: -20 ~ 40 ℃
Hydrogen Quality: ISO 14687-2 / SAE J2719
Hydrogen Pressure: 700 bar
Tank Capacity: 52 L (2.11 kg)
Driving Time: 4 ~ 5 hr (Depends on duty cycle)

Certification: KGS AH372

Utilization

- Material Handling (Forklifts)
- Industrial Equipment (Aerial Work Platforms)
- Construction Equipment
- Port Equipment

Fuel Cell Power Generator

The 100 kW fuel cell generator, composed of a fuel cell system and a power conversion unit, is a product that can be connected to the grid and is a solution for buildings and small-scale distributed power generation.

General Specification

Fuel Cell Type: PEMFC (Hydrogen fuel)
Output: 100 kW (Peak), 70 kW (Rated)
Operation: Grid-connection
Efficiency: 50 % ↑ (LHV)

Specification

Size: Generation 1,300 x 1,500 x 2,300 mm (1,400 kg)
PCS 1,000 x 1,500 x 2,340 (1.400 kg)
Grid Voltage: AC 380 V (3-phase 4-wire, 60Hz)
Communication: Ethernet (TCP/IP) and Serial (RS-485)

Installation Environment

Fuel: Hydrogen (ISO 14687-2 / SAE J2719),
Required Supply Pressure 7~9 bar
Plumbing Connections via Pipelines, etc.
Others: Indoor/Outdoor Installation, Forced Exhaust (FE),
Antifreeze or Water Cooling (Separate equipment)

Certification: KGS AH371

Utilization

- Self-generation for Buildings
- Small-scale Distributed Power Generation

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Fuel Cell Applications

Heavy-Duty Truck

City Bus

Inter-City Bus

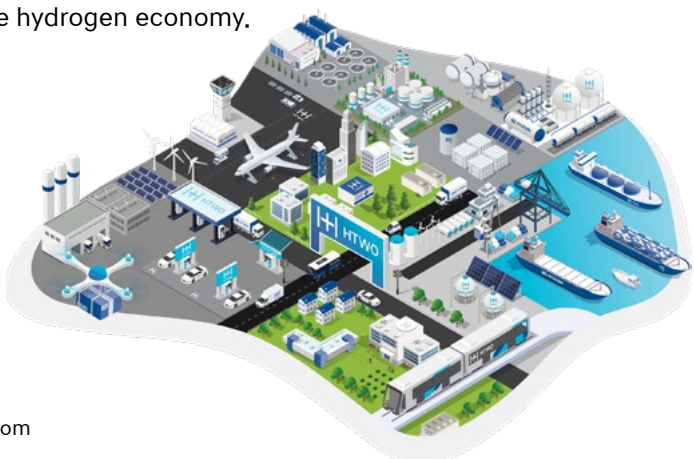
Tram

Forklift

Power Generator

About HTWO

HTWO is Hyundai Motor Group's hydrogen business brand, integrating the Group's capabilities to deliver end-to-end solutions across the entire hydrogen value chain - from production and storage to utilization. HTWO continue to evolve and grow, serving as an open, powerful platform for collaboration, partnership, and investment - driving the growth of a sustainable hydrogen economy.



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