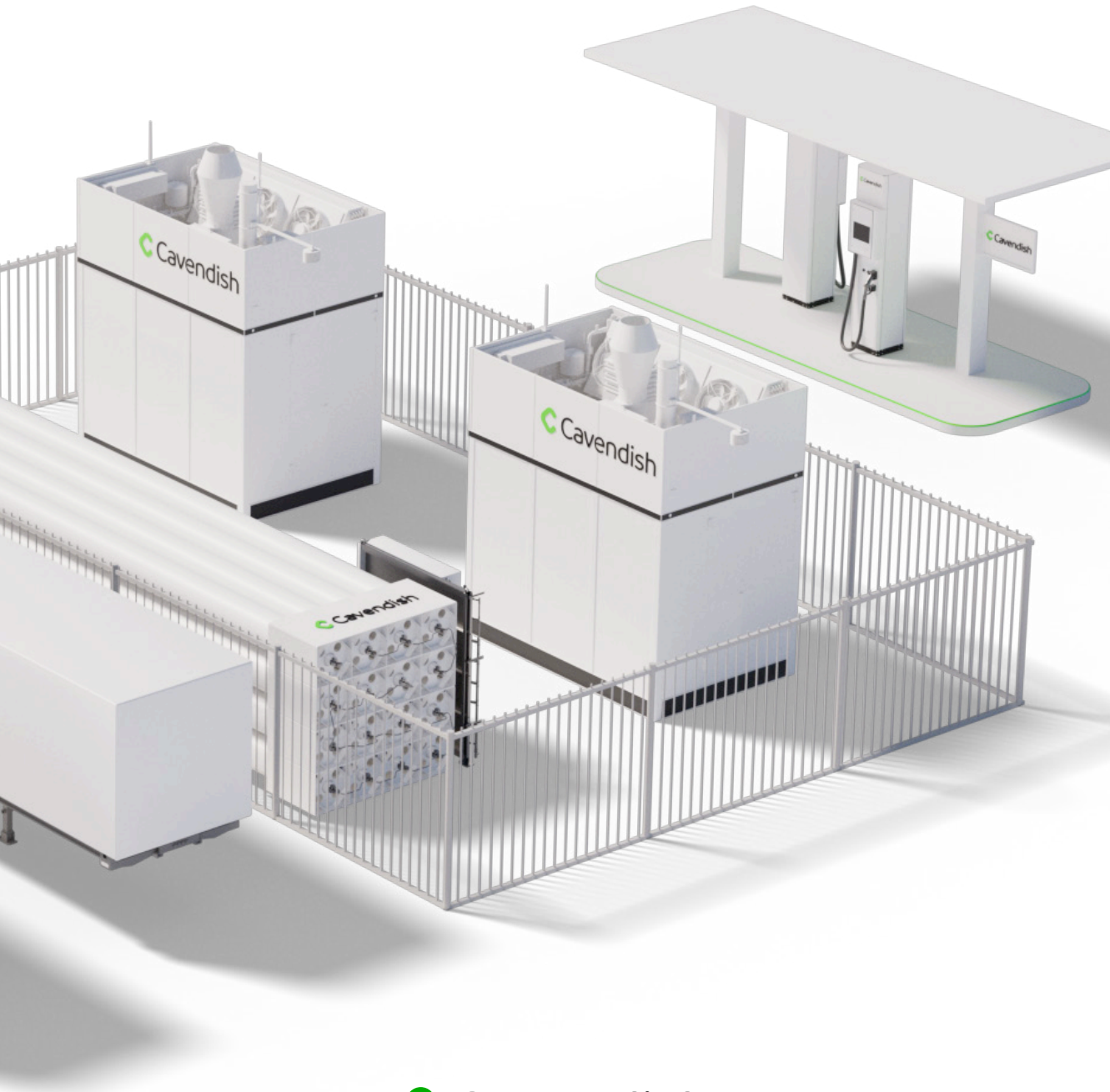
Hydrogen for Clean Mobility



Cavendish
Hydrogen

Cavendish Hydrogen is redefining energy infrastructure with hydrogen as a viable alternative fuel.

Hydrogen offers the same range and fueling time as fossil fuels, but with zero emissions, and therefore plays a pivotal role in the fight against climate change.

Driven by a vision to end emissions from mobility, we develop safe, competitive and reliable hydrogen fueling solutions for the mobility sector. Through constant innovation and deep expertise in hydrogen technology, we are at the forefront of the global energy transition.

Historic Achievements

2003
H2Logic was founded in Denmark

2009
1st 350 bar Fueling Station

2011
1st 700 bar Fueling Station

2013
1st H2Station™ for bus refueling

2015
Nel acquires H2Logic

2016
2nd Gen 700 bar H2Station™

2016
1st office in California

2018
Factory opening in Herning

2018
1st UL Certified Fueling Station US

2019
HDV dedicated 350 bar station

2020
1st H2Station™ in Korea

2023
1st UL Certified Fueling Station in Canada

2023
1st stations in Poland and France

2024
Nel Fueling became Cavendish Hydrogen

2024
New market listing on Oslo Stock Exchange

Our Manufacturing Plant in Herning

One of the world's largest production facilities, with the flexibility to expand capacity as needed.

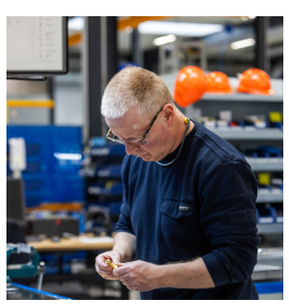
An all-in-one plant, bringing the entire value chain together under one roof.

Control Over Full Value Chain

1

Product Development

Our product- and technology-development is driven by Cavendish's deep expertise in hydrogen fueling technology. This expertise is based on nearly 20 years of field experience and got supplemented by learnings due to increased products' utilization.



2

Sales

Our sales process is focused on building long-term trusted relationships and expanding our network of key industry customers.

3

Procurement & Logistics

Our strategic long-term agreements with key suppliers ensure efficient procurement and logistics.

4

Production

Our lean production is focused on safety, standardization and efficiency to optimize output and quality.

5

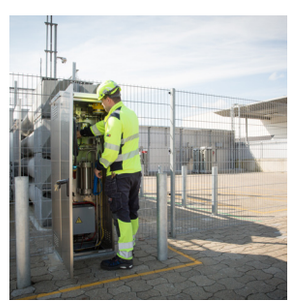
Installation & Commissioning

Our project management, project engineering and site installation teams provide full support throughout installation and commissioning, ensuring a seamless and successful project completion.

6

Service

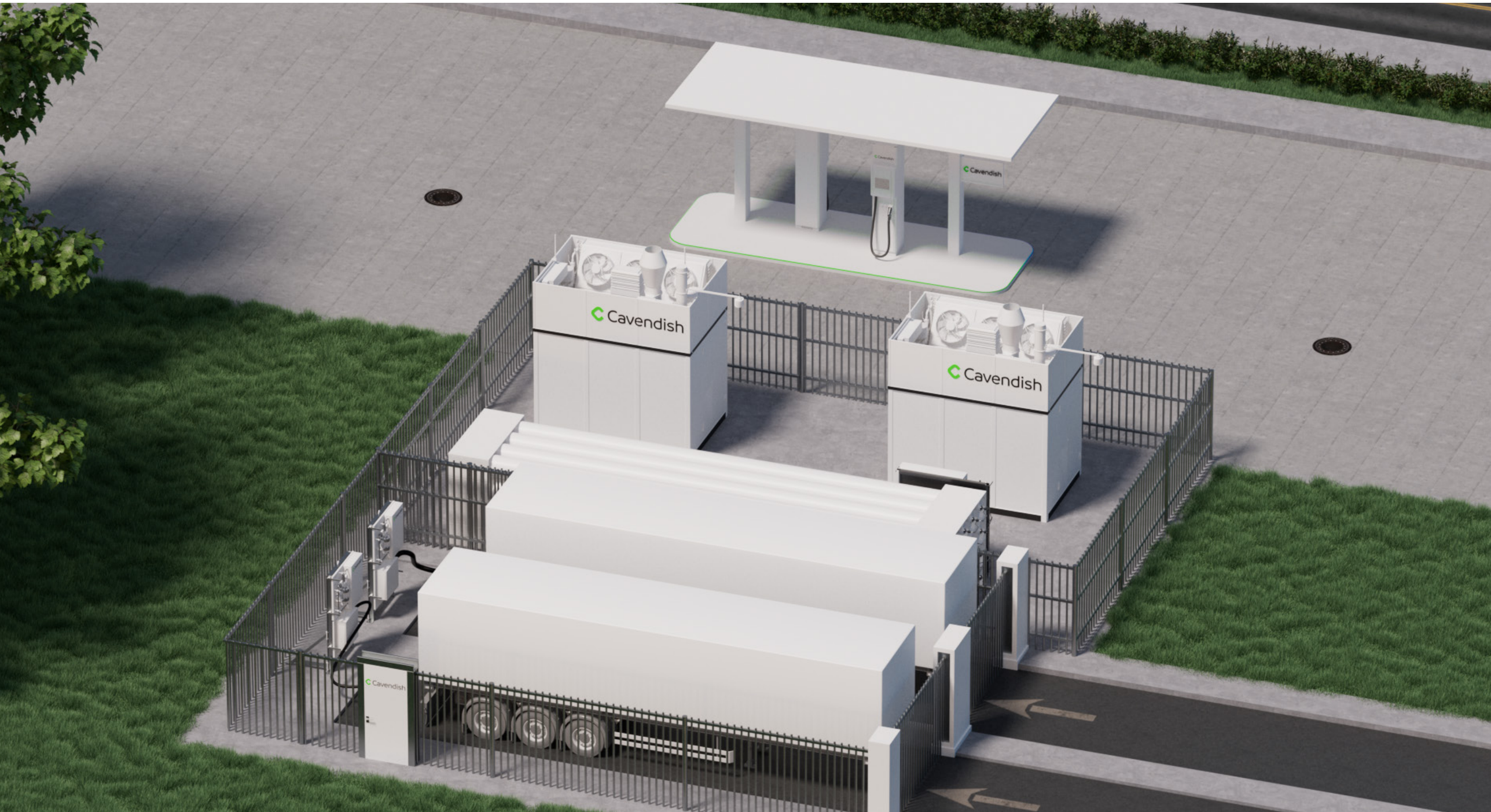
A global 24/7 monitoring system, combined with preventive and proactive maintenance, guarantees optimal system performance.



Safe and Fast Fueling of Hydrogen

Discover the ease of our all-in-one hydrogen fueling station, designed to seamlessly integrate hydrogen supply, compression, and cooling with efficient storage and intuitive dispensing. It’s the perfect solution for smooth and dependable hydrogen fueling.

With over 20 years of experience and one of the largest networks of stations worldwide



Full System Breakdown

H2Serve
Swap Transfer
& Bulk Transfer
Panels

H2Buffer
Storage Vessels
& Storage Panels

H2Core
Compression,
Conditioning &
Controls

H2Connect
Hydrogen
Dispenser

Vehicles

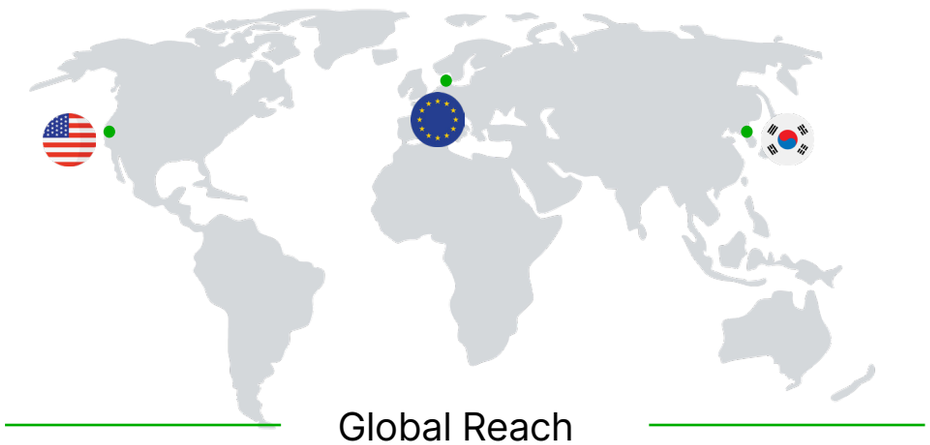
Passenger cars

Buses

Trains

Trucks

Real-time Station Monitoring & Diagnostics



Global Reach

Hydrogen Station

Remote Data Collection

Monitoring & Analysis

24/7 Remote Monitoring
Instant remote event-solving by hydrogen service technicians

Dispatching of Service Team
If event is not solved remotely, local service technicians are sent to site

Harvesting Big Data
Data gathering system with great potential for use of big data analytics optimization in development of the HC-HS concept

Fully Modularized and Scalable Product Platform Designed for Heavy-Duty Applications

Fueling Capacity
~260kg per hour
(>3.200km range for heavy trucks)

Standardization
Compliant with
SAE J2601-5 and future ISO standards

Filling Time
65kg in 10 min
(~800km in 10 min)

Number of Dispensers
Up to 6 dispensers on site

Note: The figures presented are target specifications of the HC-station concept and not applicable to current product solutions

Customer Stories

Multipurpose Station in South Korea

Location: Pyeongtaek, Korea
Customer: Kogas Tech
Station Capacity: 600 kg/day
Operational since 2021

Multipurpose Station in Poland

Location: Solec Kujawski, Poland
Customer: Solbet
Station Capacity: 500 kg/day
Operational since: 2023

Bus Station in Netherlands

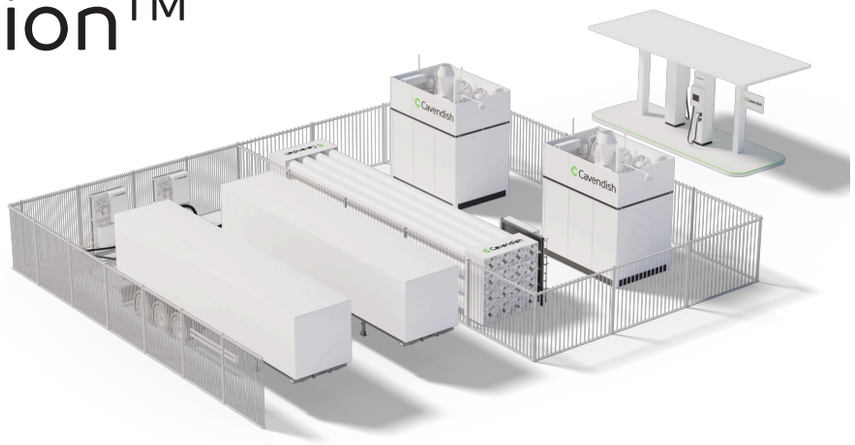
Location: Heinenoord, Netherlands
Customer: Everfuel
Station Capacity: 1,200 kg/day
Operational since 2022

Bus Station in UK

Location: London, UK
Customer: TfL
Station Capacity: 1,200 kg/day
Operational since 2021

H2Station™

Hydrogen Fueling Station



European version of the product with swap supply

	HS004 2-stage	HS-ABB LP Duplex	HS-AAA HP Duplex
Region	Europe	Europe	Americas
COMPRESSOR PERFORMANCE AND ENERGY CONSUMPTION			
*Energy consumption for compression of Hydrogen			
Inlet Pressure @20 MPa	50 kg/h & 1.1 kWh/kg	102 kg/h & 1.2 kWh/kg	30 kg/h & 1.32 kWh/kg
Inlet Pressure @45 MPa			100 kg/h & 0.55 kWh/kg
SAFETY EQUIPMENT			
Key RCS	CE Marked Functional Safety EN61511 ISO 9001 Certified	CE Marked Functional Safety EN61511 ISO 9001 Certified	UL/cUL Certified Functional Safety EN61511 ISO 9001 Certified
Key Safety Equipment	Full safety Instrumented system (SIS) incl. Mechanical safety - shutoff valves Fully autonomous safety software Leak detection software Hydrogen and CO2 gas detectors Smoke and UV detectors		

	HS004 2-stage	HS-ABB LP Duplex	HS-AAA HP Duplex
Region	Europe	Europe	Americas
FUELING INFORMATION			
Ambient temperature	-20 to 40ºC		
Storage pressure level	22.5, 45 and 93 MPa	45 MPa	45, 93 MPa
Inlet pressure range	3 - 20* MPa *can be increased by using a pressure regulator	3 - 45 MPa	6 - 50 MPa
Flowmeter / Accuracy	Coriolis mass flow meter /OIML Accuracy Class 2 for EU and CDFA DMS Accuracy Class 5.0 for US		
Light Duty Fueling Protocol(s)	H35-T20 SAE J2601-1 (1.2-6 kg) H70-T40 SAE J2601-1 (2-10 kg)	N/A	H70-T40 SAE J2601-1 (2-10 kg)
Medium and Heavy Duty Fueling Protocol(s)	H35-T20 SAE J2601-1 (6+ kg) CEP E-MAP	H35 Nel Optifill® (6-60 kg) CEP E-MAP	H35 Nel Optifill® (10-100 kg) H70-T40 JPEC S-0003
Fueling Nozzle	Compliance with ISO 17268 and SAE J2600 H35: 35 MPa, Normal Flow H70: 70 MPa, Normal Flow	Compliance with ISO 17268 and SAE J2600 H35: 35 MPa, High Flow	Compliance with ISO 17268 and SAE J2600 H35: 35 MPa, Normal Flow H70: 70 MPa, Normal Flow
Point-of-Sale (POS) interface	IFSF 2.32 and Two-Wire Protocol		
UTILITY REQUIREMENT			
Voltage	400 VAC Three phase + N	400 VAC Three Phase + N	480 VAC Three Phase + N
Current	150 A	225 A	250 A
Power factor	> 0.9	> 0.9	> 0.9
Inlet connection	Hydrogen Connection = 9/16” C&T MP or 13/16” - 16 UNF - C&T MP or 3/4” BSPT-M Pneumatic Connection = 12 mm hose RSI06.2100/RSI06.2101		
DIMENSIONS			
	Length	Width	Height
Station Module	3.3 m / 10.8 ft	2.2 m / 6.6 ft	3.6 m / 9.8 ft
Dispenser	0.5 m / 1.6 ft	0.7 m / 2.3 ft	2.5 m / 8.2 ft
Swap Panel	1.3 m / 4.3 ft	1.2 m / 3.9 ft	2.0 m / 6.6 ft
Storage Vessels	7 - 12.3 m / 23 - 40.3 ft	0.6 - 2.4 m / 2 - 7.9 ft	0.6 - 2.4 m / 2 - 7.9 ft

Global Experience

North Americas

68+ stations

- 350 bar bus station with on-site production in California
- 700 bar HDV station in California
- 700 bar LDV station in California
- 700bar LDV station in Vancouver, Canada

Europe

61+ stations

- 350 and 700 bar HDV/LDV stations in Poland with On-SIte Production
- 700 bar LDV and 350 bar HDV station in France
- 350 bar bus station in Netherlands
- 700 bar LDV and 350 bar HDV stations in Germany
- 350 bar bus station in the UK

Korea

15 stations

- 700 bar LDV station in Korea
- 700 bar LDV and HDV station in Korea

Our Offices

Denmark

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Vejlevej 5
7400 Herning, Denmark

Austria

Office Address:
Gertrude-Fröhlich-Sandner-Straße 2,
Tower 9, Level 7
1100 Vienna, Austria

USA

Office Address:
111 Academy WY #220,
Irvine CA 92617, United States of America

Korea

Office Address:
Hasoro 3, Dong-gu,
Daejeon, 300-250, Republic of Korea

Our Partners

Mesure Process, part of the MPH Energy group and France Hydrogène, is a French company specializing in energy solutions for mobility and industry. As a key player in the energy transition, Mesure Process provides comprehensive services for hydrogen fueling station installations, from concept development to installation and maintenance. In partnership with CAVENDISH Hydrogen, Mesure Process delivers integrated hydrogen fueling solutions across the entire French market.

Request a quotation:

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Cavendish
Hydrogen