

Introduction of compact hydrogen refuelling Station

BHR-ST-350

All-in-one

Compact

Automatic
Remote

Highest level
of safety



Technical Specification

Structure

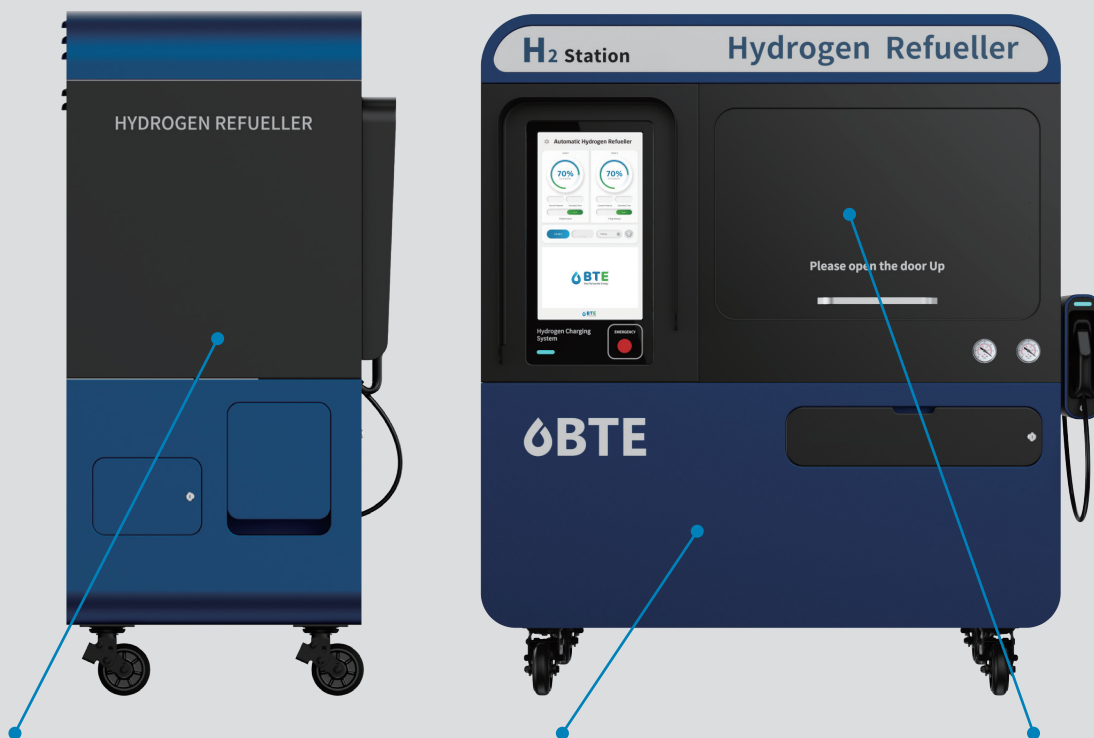
- Compressor, heat exchanger, dispenser, etc. are all-in-one systems.
- Specially designed for loading on trucks and vehicle trailers.
- It can be installed and used not only as a mobile but also as an on-site fixation wherever it is indoors & outdoors.
- For optimal performance, the ambient temperature must be between -20°C and 50°C

Function

- Compact size and lightweight for manual and automatic operation. (default automatic)
- It can be used in environments with high external temperatures and increases safety when charging by applying the internal cooling system.
- It is equipped with a dedicated SW with the optimal algorithm for charging TYPE3 and TYPE4 hydrogen cylinders, and fully automatic charging operation is possible through various sensor information.

Safety

- BOP and control algorithms considering the characteristics of hydrogen cylinders (TYPE3, TYPE4) for mobility have been applied.
- Various sensors have been applied to predict and measure various situations such as pressure rise due to temperature rise, explosion, fire, etc., and prevent accidents when charging. We have secured stability by lowering the possibility of accidents.
- IEC and KOSHA Explosion-proof standards were applied to each area of hydrogen charging equipment to separate zones, and appropriate Explosion-proof grades and certified products were applied to each zone.



Pressure Explosion-proof structure has been applied (always maintained at least 50pa) to prevent gas from inflowing into the control box even if hydrogen gas leaks.

The high-pressure part is applied with a steel plate greater than 6mm to protect the user in the event of an accident.

When charging hydrogen, it detects and controls changes in volume and temperature of cylinders in real time using infrared laser. And it is equipped with a high-performance hydrogen sensor that detects hydrogen leak during charging.

Model : BHR-ST-350

Product appearance

- Size : 1650(W) x 840(D) x 2000(H)
- Monitor : 24inch Full Touch Screen
- Material : STS304, SCP, etc.
- Thickness : 6T(Explosion-proof zone)
1.5T(General zone)
- Post processing : Powder painting
- Weight : under 500kg
- Operating temperature : -20°C ~ 50°C

- Hydrogen charging pressure : 0~350 bar
- Charging method : Air driven (electrically driven selectable)
- Supply gas : AIR (Over 5bar)
- Charging speed : Over 50Nlpm
- Power consumption : Under 2kWh
- Power : 110VAC or 220VAC
- Cooling system : External cooling system (Ready)

Safety Specifications

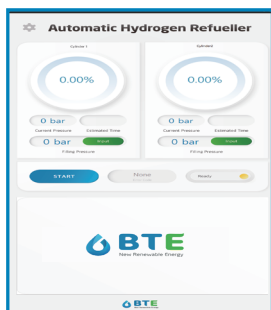
- Sensor : PSV, PRD, Displacement Detection, Gas & Fire Detection, Pressure, Temperature
- Explosion-proof Certification : KOSHA KCs, IECEx certification, etc. (scheduled)
- Certification : CE (scheduled)

Interface

- Apply touch-monitoring UI
- Provides remote monitoring and emergency control PC version software.

Description

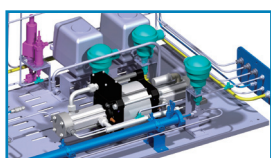
- External cooling system is applied to charge even in high temperature external environments
- Controller, compressor, heat exchanger and dispenser(charging part) are all-in-one for easy maintenance and easy installation
- Easy and intuitive UI application allows general users without hydraulic and pneumatic knowledge to use



Control panel



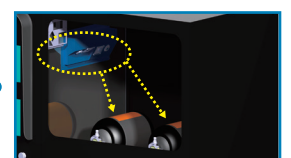
External cooling system (Ready)



Booster / Compressor



charging gun



Contactless cylinder Monitoring/control

[Hydrogen refuelling Station]

Model : BHD-ST-HC-700

Product Specifications

- Size : 1500(W) x 600(D) x 2550(H)
- Material : STS304, EGI
- Weight : 500kg
- Charging pressure : 70MPa
- Measuring accuracy : ±0.5%
- Measuring range : 0.05~3.6Kg/min
- Filling speed : 1kg/min
- Design temperature : -40°C ~ +85°C
- Design pressure : 95 Mpa
- Fueling protocol : SAE J2601
- Certification : CE (scheduled), KGS(Ready)

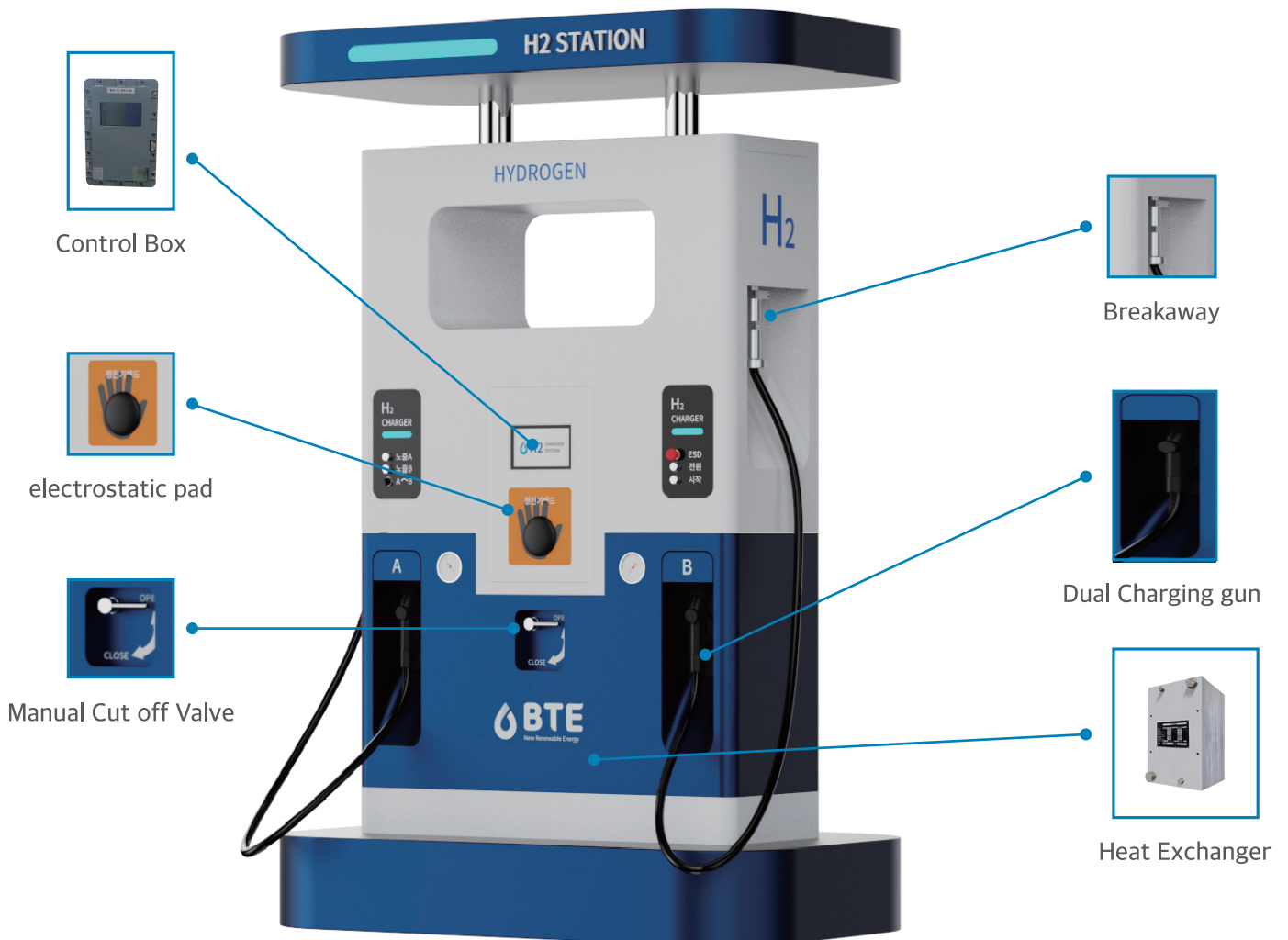
Safety Specifications

- Sensor : Detection Gas
- Breakaway : Emergency isolation over 68kg
- Manual cut off Valve
- Safety valve : set 92 Mpa
- Explosion-proof class : Exia II B+H2 T4



Description

- It is a charging type that can be used for both single and dual nozzles, car, bus/truck are compatible.
- For excellent performance and stability, the breakaway, manual cut-off valve, and gas detector are installed as internal safety devices
- Supports both on-site and off-site hydrogen production.
- Complies with the international Standard Filling Protocol
- Connectable with existing POS system



Model : Fuel Cell UGV

UGV Specifications

- UGV Main body : Automatic Driving
- UGV Fuel Cell & System Integration : BTE
- Size : 1300(W) x 790(D) x 860(H)
- External material : FRP
- Weight : Under 70kg
- Operating time : 22 hours
(200W x 2 motors running continuous basis)
- Control PC : i7-9700, 32GB RAM
- Operating system : Ubuntu 18.04
- Steering system : 4 wheels (Option Caterpillar)
- Power train : Fuel Cell

Fuel Cell Specifications

- Maker : Doosan Mobility Innovation
- Rated power : 1.25KW
- Peak power : 2kW
- Communication method : LTE, RF, DTT
- Type : PEMFC / Air Cooling

UGV sensor Specification(Optional)

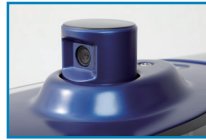
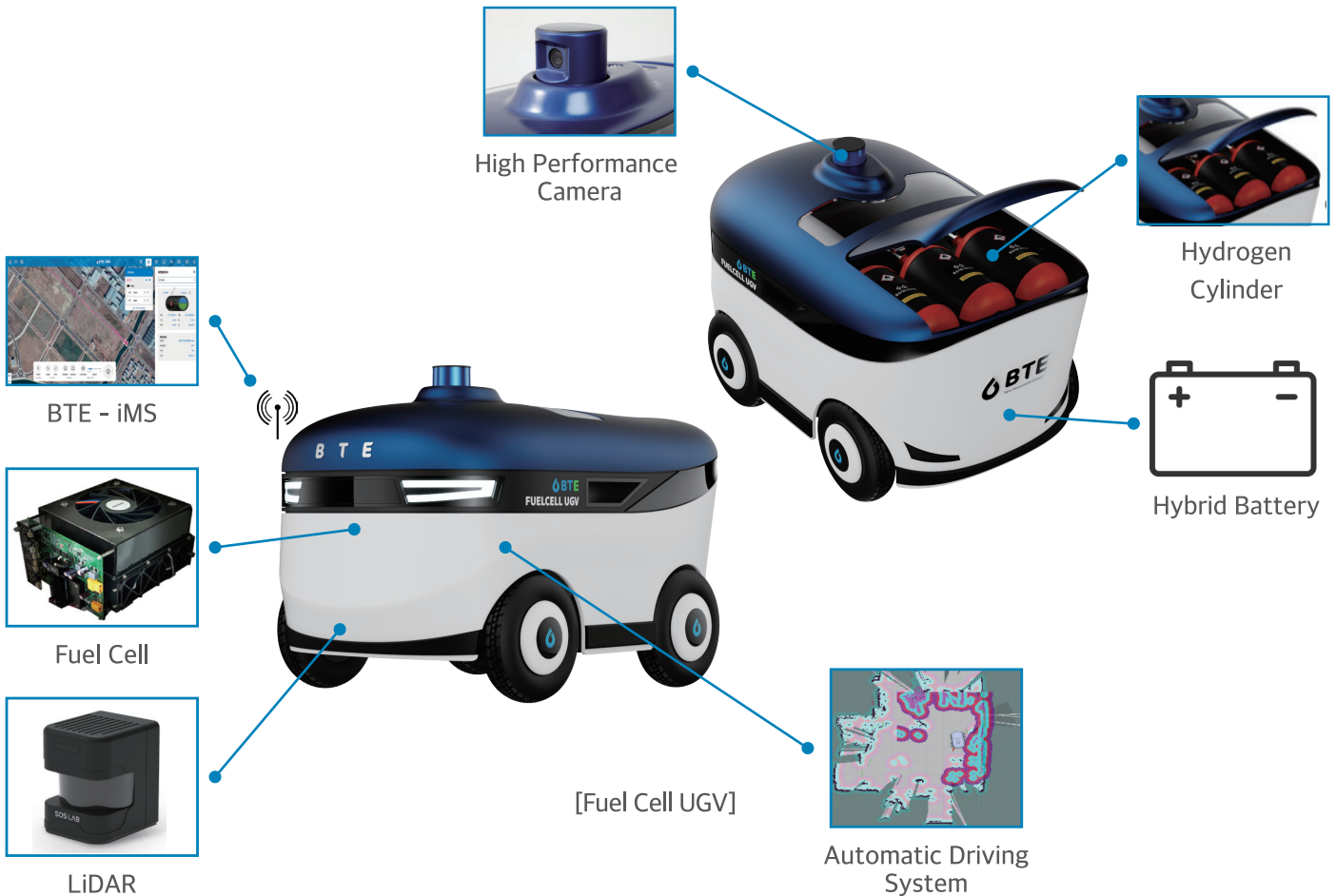
- 3D LiDAR : Vertical angle(-16°~15°)Horizontal angle(360°)
- 2D LiDAR : FoV(180°)
- 3D Camera(RGBD) : All side(180deg) Front(80deg)
- GPS : RTK-GPS (signal acquisition system via LTE)
- Vision image acquisition system : 360° Vision
- Air pollution sensor : Fine dust, ultrafine dust, VOC
- Ultrasonic sensor : Front 2, Side 8, Rear 2



- Fuel tank : 7L, 350Bar Type4 Cylinder x3
- Operating temperature : 0°C to 35°C
- Storage temperature : -10°C to 40°C

Description

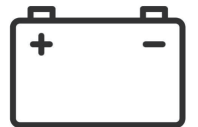
- Fuel cells using hydrogen fuel can be installed to efficiently operate for long-term patrols.
- The hydrogen cylinder can be replaced without waiting time for battery charging for up to 3 days without charging
- Optimal compatibility with multi-purpose all-in-one hydrogen chargers using the same cylinder as a hydrogen drone



High Performance Camera



Hydrogen Cylinder



Hybrid Battery



BTE - iMS



Fuel Cell



LiDAR

[Fuel Cell UGV]



Automatic Driving System

APPLICATION

It is used as a charging device for various hydrogen applications that use hydrogen fuel cells.



HYDROGEN FUEL CELL AIRCRAFT



HYDROGEN FUEL CELL BIKE



HYDROGEN FUEL CELL UGV



HYDROGEN FUEL CELL
BOAT



HYDROGEN FUEL CELL
MOTORCYCLE



HYDROGEN FUEL CELL
TRACTOR



HYDROGEN FUEL CELL
FORKLIFT

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