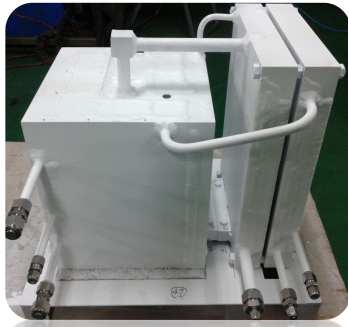


# Methanol Reformer & Hydrogen Generator Products

## Methanol Reformer



This system is a hydrogen generator using methanol reforming technology.

It enables hydrogen supply without the need for expensive hydrogen storage, transportation, and handling of high-pressure gas.

Hydrogen can be easily and economically generated anywhere.

Safe storage of reformed raw materials since it is a mixture of methanol and water (less than 60%).

### Features

- High thermal efficiency (Methanol steam reform >85% H<sub>2</sub> Purification efficiency : 70~80%)
- System heating: Flameless heating by catalyst + electric heater, compact, safety, cold start (<1hr) hot start (5~10min)
- Hydrogen Feed Pressure : ~0.5MPa.G
- Hydrogen Purity : 4N~6N
- Other special specifications can be manufactured.

## Hydrogen Generator

### System Heating

Flameless heating of catalysts

### Methanol Reformer

Methanol steam reform reaction  $\text{CH}_3\text{OH} + \text{H}_2\text{O} \rightarrow \text{CO}_2 + 3\text{H}_2$

H<sub>2</sub> Production Rate : 18Nm<sup>3</sup>/hr ▶▶



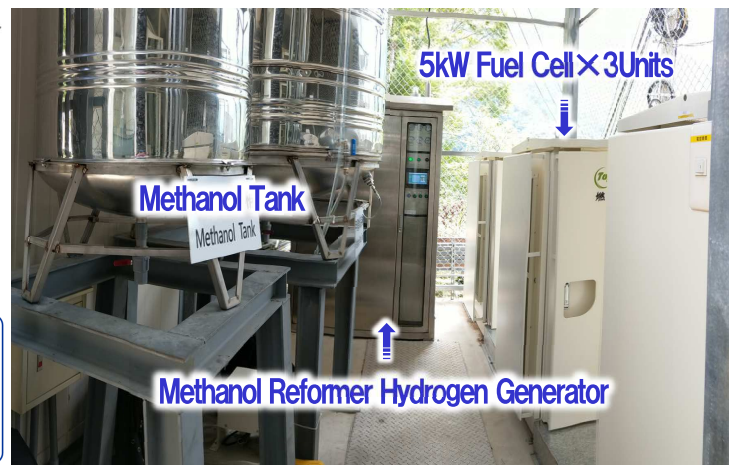
◀ Model Number : ENM5N-5

◀ H<sub>2</sub> Production Rate : 5Nm<sup>3</sup>/hr ± 5%

◀ Dimensions : W800×D650×H1410mm

◀ Weight : 350kg

*Please note that the technical specifications for this device, as provided by the manufacturer in Japan, may differ depending on the country in which you plan to use the device. Please consult the relevant documentation or seek expert advice if you have any concerns or questions about using this device in a particular location.*



ENM5N Series		ENM5N-5	ENM5N-10	ENM5N-15	ENM5N-20	ENM5N-25	ENM5N-30
H 2  G e n e r a t o r	Gas Purity	Hydrogen Purity : > 99.9999% (CO : < 0.5ppm)					
	Hydrogen Flow (0°C 1atm)	5Nm <sup>3</sup> /hr ±5%	10Nm <sup>3</sup> /hr ±5%	15Nm <sup>3</sup> /hr ±5%	20Nm <sup>3</sup> /hr ±5%	25Nm <sup>3</sup> /hr ±5%	30Nm <sup>3</sup> /hr ±5%
	Energy Consumption	450W	800W	1100W	1200W	1500W	1600W
	Dimensions D*W*H (mm)	650*800*1410	900*1000*1750	1050*1100*1950	1050*1100*2150	850*1500*2200	850*1500*2300
	Weight	350kg	600kg	800kg	1000kg	1200kg	1500kg
D a t a	Hydrogen Pressure	≤0.5MPaG					
	Raw Material / Liquid Concentration	Methanol aqueous solution / Concentration (58±2wt%)					
	Methanol Heating System	Flameless platinum oxidation catalytic heating (Fuel : Methanol / Methanol aqueous solution)					
	Pressure Protection	○					
	Built-in Hydrogen Detector	○					
	Cold Start Methanol Heating	Startup time at a room temperature of 20°C : 50min					
	Cold Start Methanol aqueous solution	Startup time at room temperature of 20°C : 90min			Startup time at room temperature of 20°C : 120min		
	Hot Start	< 10min Rated output 100%					
	Reaction Temperature	<300°C					
	Operation Panel	Touch panel (PLC operated)					
O t h e r	Chassis Material	Carbon Steel					
	Cooling Method	Water Cooled / Air Cooled					
	Room Temperature	0~40°C (If the ambient temperature is below freezing, additional heating equipment is required.)					

### Raw Material Regulations

Methanol	Industrial Grade I Purity : > 99.5% Ethanol : <10ppm Sulfides content : <5ppm Acetone: <5ppm
De-ionized Water	TDS : 0.1ppm Resistance : > 2MΩ·cm Electrical Conductivity : <0.5μS/cm