



Marine Fuel Cell

A 'Fuel Cell' operates like a battery and converts chemical energy of a fuel (hydrogen, natural gas, methanol) and air into electricity through a simple electrochemical reaction. By-products of this reaction process are heat, water, and a very small amount of carbon dioxide. Unlike a battery however, a fuel cell does not run down or require recharging. It will produce electricity and heat as long as fuel and an oxidizer are supplied.

In traditional systems, a charging mechanism (shore power, generator) is used for a few hours each day to store power in the battery bank for use over many hours. Fuel cells produce power constantly, which means the battery bank is only needed to supply momentary peaks in power consumption and store excess fuel cell output for future momentary peaks. The battery is never really discharged, holding between 70-85% of full charge. This "constant power" approach reduces the charge/discharge cycles imposed on house batteries, thereby significantly increasing their service life, and reducing the required size of the battery bank.

Although NASA has been using fuel cell technology for over 40 years, recent development of a methanol-based (instead of hydrogen) system has made this technology available to the marine market.

Features:

- Compact, easy to use and install—no need for insulation, wet exhausts or cooling water inlets
- Capable of running 24hr/day, the fuel cell continually supplies power as needed
- Provides clean and virtually silent 12V DC power to charge batteries or power 12V systems
- No moving parts – making it a quiet and reliable source of power
- Automatically monitors batteries – switches on/off to charge only when needed
- Automatically switches off when the engines alternator charges the batteries
- Can be connected in parallel to achieve the required average daily power consumption
- Can run in confined spaces with ventilation
- Recommend for boats with a service battery bank of 75-300Ah
- Dual operation: Totally automatic or manual charging
- Electric cut-off overload and short-circuit protection (8A)
- Kit comes complete with fuel cell, control panel with 16' (5m) cable, fuel cartridge holder with strap, mounting plate with strap, 3' (1m) charging cable, 5' (1.5m) silicone exhaust tube, hot air exhaust kit, initial supply of Medium Process and maintenance kit.

Specifications:

- Voltage: 108V-14.2V
- Methanol Consumption: 1.1L per kWh
- Operating Temperature: -4 to 104°F (-20 to 40°C)
- Humidity: 20-90%
- Noise: 39 dB at a distance of 3' (1m)
- Dimensions: 17.1"l x 7.9"w x 10.9"h (435 x 200 x 276mm)
- Weight: 15.5-17.6 lbs (7-8 kgs) depending on model
- 5L Fuel cartridge weighs 9.3lbs (4.2kg)

Model	Ah per day	Continuous Output (12V)	Recommended for Boats	Hours per 5L Cartridge
MFC60	60	2.5A	<32'	152
MFC110	110	4.6A	32-40'	74
MFC140	140	5.8A	40-48'	66

Accessories

- MFCM0 Medium Process, Set of 2
- MFCM5 Methanol Cartridge, Set of 2

For more information please go to www.marine-fuel-cell.com