MFC3000 & MFC5000

HIGH CAPACITY FUEL CELL POWER

Horizon Fuel Cell Technologies

3kW / 5kW
configurations available

MFC3000 & MFC5000 offers extremely long endurance power in the field compared to other alternatives. It is as quiet as a whisper and has minimal carbon emissions. Its integrated fuel cell uses an electrochemical process to generate electricity with few moving parts. The MFC3000 & MFC5000 is fueled by a safe and economical methanol-water blend.

- **Uses low-volatility fuel**
- **99.999% SLA, always available**
- **Outdoor cabinet (IP54)**
- **Near-silent operation**
- **Hybrid solution for battery charging with wind or solar power**
- **Remote monitoring and control functionality (TCP/IP)**
- **Environmentally friendly, extremely efficient**
- **Light and compact, ideal for rooftop sites**

The Horizon **MFC 3000 & MFC 5000** offer cost-effective, long endurance power in the field compared with traditional battery / genset solutions. These systems deliver power quietly in a compact footprint without vibration, while minimising carbon emissions and maintenance. The MFC 3000 & 5000 systems effortlessly deliver DC power using a safe and economical methanol-water blend as fuel.

APPLICATIONS

- Battery / GenSet replacement
- Off-Grid continuous power
- On-Grid back-up power
- Telecom Sites
- Airfield Lighting
- Rail Signaling

HYBRID SOLAR MFC3000 & MFC5000 CONFIGURATIONS

MFC3000 & MFC5000 can be combined with a PV solar system to reduce fuel consumption and provide an even longer lasting power source. If the solar modules can produce adequate electricity, the solar system takes over and MFC3000 & MFC5000 goes into standby mode.

MFC3000 & MFC5000 RUN TIMES

MFC3000 & MFC5000 fuel consumption is 0.95 Liter per kWh of output, across a wide range of loads. A 100 Liter drum of fuel would provide 105 kWh of electrical power, or a run time of around 35 hours at an average 3 kW load. Need more run time? Just use a larger tank!

Contact: sales@horizonfuelcell.com

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SYSTEM SPECIFICATIONS	MFC 3000	MFC 5000
Nominal Continuous Power Output	0 to 3,000 W @ 20°C and 101.3 kPa	0 to 5,000 W @ 20°C and 101.3 kPa
Nominal Voltage	43.2 – 57.6V DC	43.2 – 57.6V DC
Nominal Current	62.5A @ 48V	104.2A @ 48V
Dimensions (WxDxH)	700 x 1150 x 2030mm	700 x 1150 x 2030mm
Total Weight	About 300 kg	About 350kg
OPERATION		
Power Conditioning	DC/DC converter	
Cold Start Time Required	3-4 hours from 20°C	
Cold Start Power Requirement	48V DC, 1000W for 3-4 hours	
Hot Standby Power Consumption	<150W	
Hot Standby Start Time	50% power within 10 minutes, 100% power within 15 minutes	
Fuel Consumption (Methanol/Water mix)	0.95L/kWh @ 20°C and 2.5 KW*	
EMISSIONS		
Reformer Exhaust	CO_2/H_2 by-product, must be properly vented to outside atmosphere	
Noise	<65 dBA @ 1m	
NOx , SOx	None	
FUEL CELL SYSTEMS		
Type	PEM	
Coolant	Air	
Fuel Type & Specification	Methanol-Water mix at Ratio of 61.5% methanol, 38.5% deionized water by weight	
Methanol Quality Requirements	99.85% purity, recommend Methanol compliant with IMPCA Specifications	
Water Quality Requirements	Deionized water (ASTM Type II)	
Hydrogen Purity Delivered	99.99% pure hydrogen	
Fuel Storage	Built-in 200L or External (Optional); Suggest plastic enclosures rated for Methanol	Built-in 100L or External (Optional); Suggest plastic enclosures rated for Methanol
OPERATING ENVIRONMENT		
Operating Temperature Range	-25°C to +45°C (Need additional heater for -25°C to -5°C)	
Relative Humidity	0 to 95 % non-condensing	
Recommended Altitude	<3,000 meters, 9,840 ft	
Shipping Freeze Exposure	Fuel cell stack non-operating / shipping exposure limit: -25°C	
Usage	Outdoor	
CONTROLS & COMMUNICATION		
User Interface	Control Panel	
Remote Monitoring & Control	Standard: RS485 Optional: TCP/IP, GPRS, SMS	

* Actual consumption depends on operating conditions.
**Specifications are subject to change.

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