



**Intelligent
Energy**



Data sheet

FCM-801

Power Unit, PEM hydrogen fuel cell module (FCM) 48V/24V DC; 1.2kW/0.96kW

Intelligent Energy is a fuel cell engineering company focused on the development and commercialisation of its PEM fuel cell technologies for a range of markets including automotive, stationary power and UAVs. We are headquartered in the UK, with additional operations in the US, Japan, India, and China.

Please contact us for availability and pricing.

Further Information

Running on hydrogen and oxygen from the air, the FCM is designed as a self-contained power solution with all requisite balance-of-plant components to produce clean DC power in a power-dense and convenient package. The compact and modular unit can be deployed to deliver power for a wide range of electricity needs to keep your critical applications working, when you need them most.

Features

- Lower life-cycle costs than standby diesel generators; with minimal service requirements
- Zero harmful system emissions
- Quiet operation
- Lightweight and compact design for manual handling
- Small footprint
- Regulated output designed for hybridisation with a 24V or 48V battery array
- Proven and reliable fuel cell system technology
- Utilises Intelligent Energy's air-cooled AC64 fuel cell technology with robust metal fuel cell construction
- Assured power availability
- Modular, scalable system
- Simple balance-of-plant

Applications

- Telecommunications
- Disaster recovery
- Portable power generation
- Backup power
- Emergency power
- Off-grid power
- Microgrids
- Auxiliary power units
- Material handling equipment

Intelligent Energy FCM specifications

Performance	Rated net power ¹	1.2kW @ 48V or 0.96kW @ 24V
	Output voltage regulation	to ETS 300-132-2
	Rated current	25A @ 48V or 40A @ 24V
	Emissions	Water vapour
Fuel	Fuel type	Hydrogen gas
	Fuel pressure	500mbarg – 800mbarg
	Fuel consumption	Less than 60g per kWh ⁸
	Fuel storage	External storage available separately. Compatible with reformer technology or compressed hydrogen gas
	Fuel composition	99.95% gaseous hydrogen or better ²
Operations and maintenance	User interface	Options available ^{3,7}
	Start-up time	Less than 10s
	Automatic start/stop	Standard
	Manual start/stop	Available
	IP rating	IP20
Safety and health monitoring	Certification	CE, FCC
	Health monitoring	Options available ^{4,7}
Physical	Mass	~10kg
	Max dimensions	225mm (W) × 300mm (H) × 550mm (D)
	Connections, gas	G1/8 parallel BSP threaded port with face seal, female
	Connections, electrical	Power leads 2 × 8AWG 1 × CAN hi/low/gnd, 1 × LED driver, 1 × FCM run input, 1 × FCM enable input
Normal operating conditions	Altitude	0 – 4000m ^{5,7}
	Operating ambient temperature range	+5°C to +40°C ⁷
	Relative humidity	10% to 90% ^{6,7}
	Storage temperature	-40°C to 70°C

¹ >95% duty cycle

² According to quality characteristics of Type 1, Grade E and Category 3 hydrogen fuel specified in BS ISO 14687-3:2014(E)

³ CAN interface can be provided

⁴ Options available for continuous health monitoring and predictive maintenance scheduling for high system availability

⁵ Rated power to 1500m. Power de-rate commences above 1500m

⁶ Rated power from 30%. Power de-rate commences below 30%

⁷ Please contact us to discuss your requirements

⁸ Achieved at 25 °C, beginning of life



+44 (0) 1509 271 271
sales@intelligent-energy.com
intelligent-energy.com