

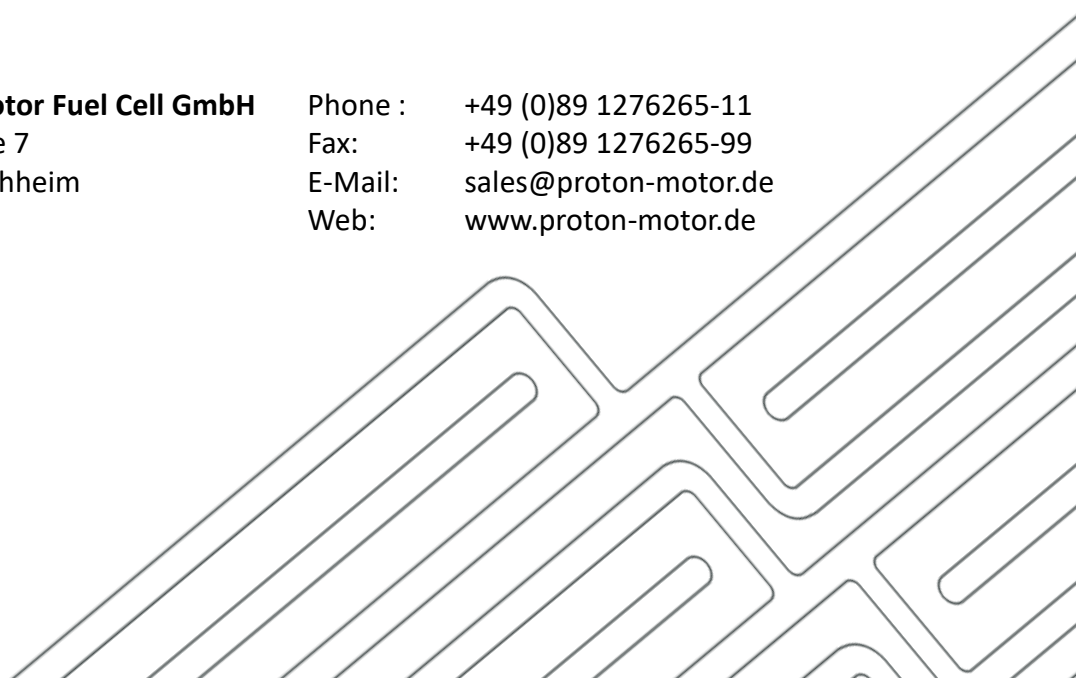
Proton Motor Fuel Cell GmbH Stationary Fuel Cell Solutions

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Proton Motor Fuel Cell GmbH provides solutions for clean energy supply and clean mobility.

German manufacturer of fuel cell stacks and fuel cell systems for maritime, stationary and mobile applications.



Proton Motor Fuel Cell GmbH,
Headquarters Puchheim,
production plant, labs & offices on ca. 6000 m².

FC development since 1994 (Magnet Motor),
PM founded 1998 as independent company,
today >100 employees



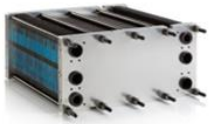
Proton Motor is a subsidiary of:



(Holding, listed at LSE since 2006)

Solutions for Stationary Applications - Know How and Scope of supply (1/2)

Fuel Cell Technology



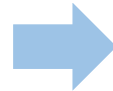
Monitoring &
Control

Hydrogen Supply
Unit

Cooling Unit

Air Supply Unit

Power Electronics



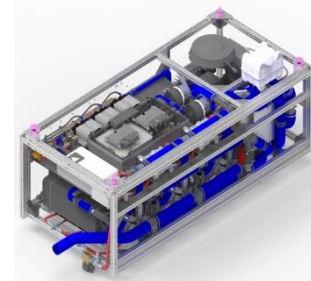
Fuel Cell Systems



PM Module



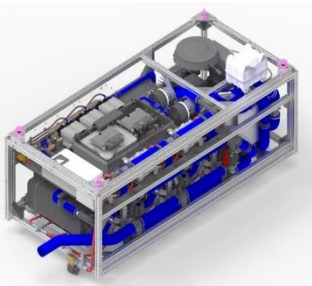
PM Frame



PM HyScale

Solutions for Stationary Applications - Know How and Scope of supply (2/2)

Fuel Cell Systems



Mechanical Design

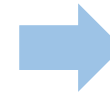
Voltage Adaption with
Power Electronics
(DC/DC, DC/AC- Converter)

Secondary Cooling Circuit or
Plate Heat Exchanger for
Heat Utilization

Main Controller, Monitoring
System & Communications
(data logging & online
diagnostics possible)

Hybridizations with Battery
System (optional, depending
on application)

Safety Measures,
e.g. hydrogen sensors,
forced ventilation



Turnkey Solutions on-grid / off-grid





**Seasonal Energy
Storage**



Charging Stations



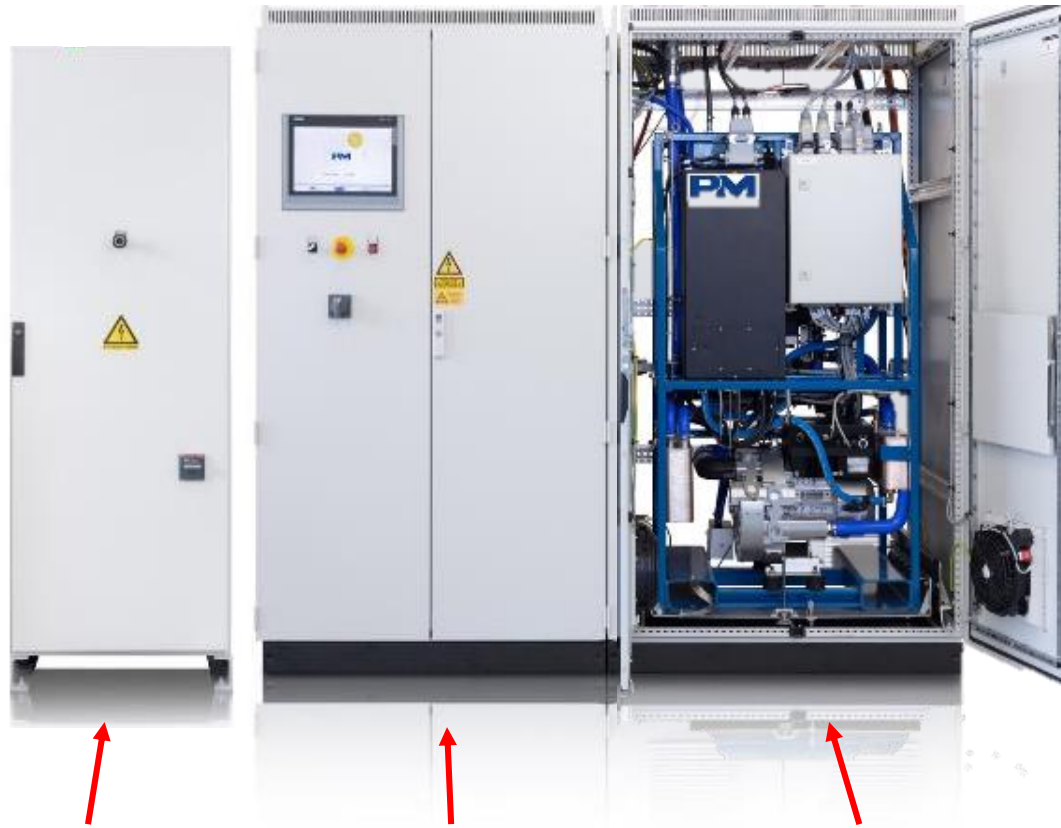
Off-grid Power Supply



**Emergency Power
Supply**



Grid Stabilization



Cabinet with
Inverter for AC
connection

Control Cabinet for
Measuring, Controlling &
Regulating

Cabinet with
Fuel Cell System

Turnkey solution with PM Frame S36

Application:

- Installed in a residential building complex
- Local power supply by regenerating locally produced and stored hydrogen
- Use of thermal waste heat
- Mains-synchronous operation

Customer: Vonovia SE

Location: Bochum, Germany

Commissioning: 2021



© APEX Energy Teterow GmbH

Turnkey solution with 5x PM Frame S36

Application:

- Part of industrial scaled hydrogen energy storage system
- Hydrogen production from excess wind energy
- Outdoor Installation
- Use of thermal waste heat possible
- Mains-synchronous operation

Customer: APEX Energy Teterow GmbH

Location: Rostock-Laage, Germany

Commissioning: 2020



PM Module S8 for Knappenhaus

Application:

- PM Module integrated into hydrogen energy storage system for grid independent mountain cottage
- Renewable energy source is a stream

Customer: GKN Powder Metallurgy

Location: Kasern, South Tirol, Italy

Commissioning: 2019



Turnkey solution with 3x PM Module S8

Application:

- Emergency power supply of a railway signal box
- Bridging time 48h
- Output voltage: 3 x 400VAC; 50Hz
- Output power: 25 kVA

Customer: DB Bahnbaugruppe

Location: Sömmerda, Thuringia, Germany

Commissioning: 2018



100%
Energie

Zero
Emission

Thank you for your attention!



Fuel Cells · Power Systems

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