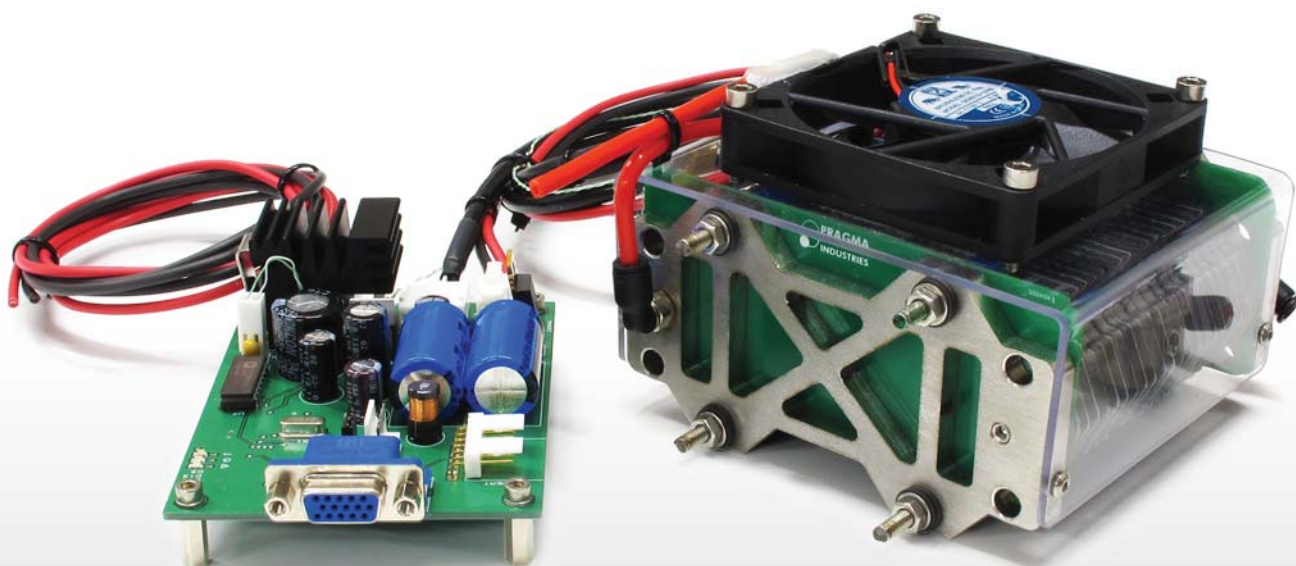


FUEL CELL SYSTEMS

For PROJECTS and RESEARCH WORK



30W to 100W fuel cell systems

The complete kit including a compact fuel cell and its control electronics is an ideal solution for development projects. Numerous topics can be studied through this complete system:

- Hydrogen and energy conversion
- Mechanical integration
- Fluids and thermal effects
- Power electronics
- Signal conversion and sensors
- Embedded programming

Delivered "ready for integration", the pack offers multiple key features for advanced integration projects: available inputs for additional sensors*, onboard measurements, digital and analog outputs*, open source PIC code. Depending on the chosen application, the fuel cell can be used as stand alone or combined with a power buffer (super capacitors for instance) or combined with another power source (batteries, solar panels, wind generator...).

* with the optional analog/digital converter module

MODULARITY

COMPACTNESS

EVOLUTION CAPABLE



PRAGMA
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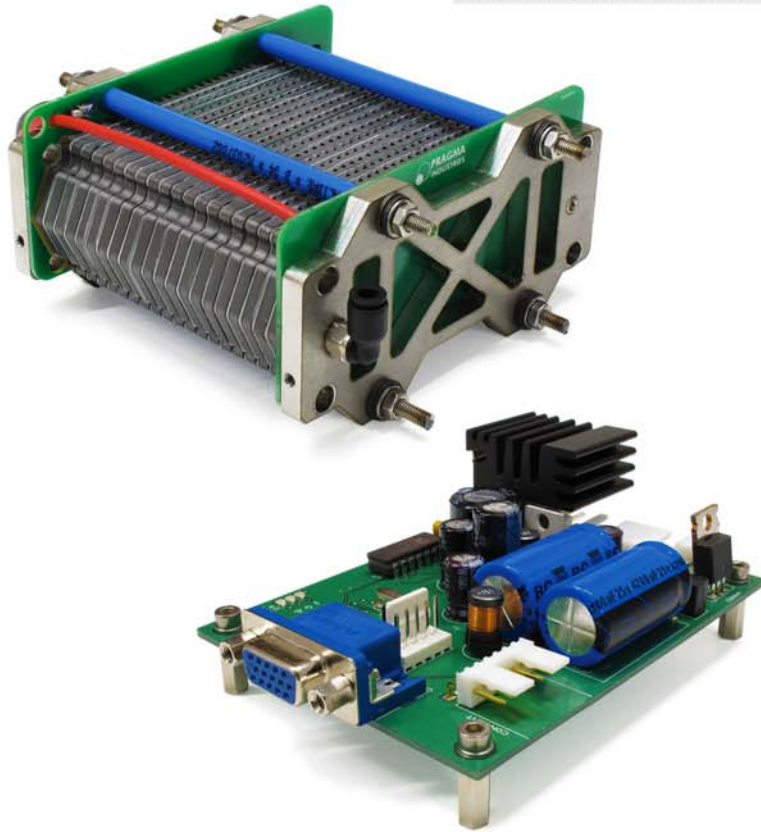
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The package includes:

- Open-cathode fuel cell (PEM type)
- Electronic control module
- H₂ purge micro valve
- Integrated air blowing fan
- On/Off/Menu switch on wire
- Power connector
- Open source code
- User guide

Fuel cell specifications

Model reference	FCP30	FCP50	FCP75	FCP100	FCPc
Number of cells	12	20	30	40	custom
Power (at 0,6V/cell)	30 W	50 W	75 W	100 W	2.5 W/cell
Maximum power (0,45V/cell)	40 W	67 W	100 W	133 W	3,3 W/cell
Voltage range (with 0.6V/cell limiter)	7.2 - 11.2 V	12 - 19 V	18 - 28 V	24 - 38V	-
Current (at 0.6V/cell)	4.25 Amps	4.25 Amps	4.25 Amps	4.25 Amps	4.25 Amps
Dimensions (mm)	84x115x75	116x115x75	156x115x75	196x115x75	-
Gross weight (stack+ fan + valve)	750 g	900 g	1100 g	1300 g	-



Key features:

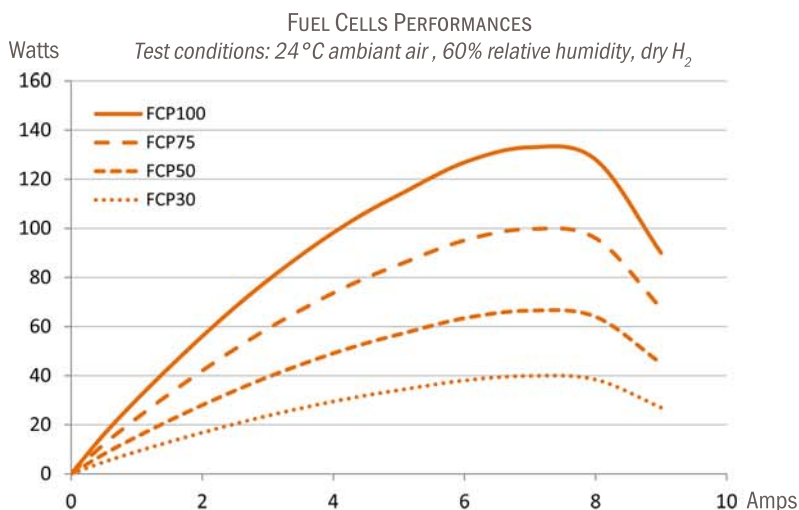
- Open design for maximum adaptability to application
- Evolution-capable electronic management module with multiple inputs and outputs available for sensors and command/control
- Availability of the microcontroller source code for development of new system functions
- Fuel cell operates without external gas humidification
- Stand alone system (electronics entirely power by fuel cell - no external power required)
- Complete user guide with examples of integration work

Fuel cell operating conditions

Reactant gases	H ₂ / air
Operating temperature	5°C - 30°C
Maximum fuel cell temperature	55°C
Fuel cell cooling	Air cooled
Humidification	Self-humidified
H ₂ supply pressure	0,2 - 0,3 barg
H ₂ purity	≥ 99,995 dry

Control module specifications

Power source	Self powered by the fuel cell
Minimum voltage	7V required for operation
Max temperature security	60°C
Outputs	12V fan power 12V purge valve power FC voltage and current (analog) Fuel cell temperature (analog) Purge valve position (digital) Inlet valve position (not allocated) Alarm signal (digital) Short Circuit Manager state (digital)
Available inputs (on analog/digital optional converter)	4 analog inputs for sensors 4 digital inputs
On/off/menu control	Single state push button
Weight	165g



Choose amongst a panel of accessories to extend your system capabilities and complete your project:

- Metal hydride H₂ cartridges
- H₂ cartridge fast filling set
- DC/DC converters
- Analog/digital signal converters
- Teaching material for education



Pragma Industries SAS
Z.A. de Bassilour
665 rue de Bassilour
64210 Bidart - France

Bus. +33 (0) 559 512 755
Fax. +33 (0) 559 230 798
contact@pragma-industries.com
www.pragma-industries.com