# HYFORM-PEMFC

### Prototype of Reformed Formic Acid (FA) Fuel Cell (FC) Power Generator

World 1<sup>st</sup> integrated FAFC 1 kW<sub>e</sub> system Technology Demonstration unit



#### **KEY FEATURES**

The generator combines a Formic Acid catalytic reformer (as a  $\rm H_2$  source) and a commercial PEM Fuel Cell,

The generator is independent of gas grid.

Advantages VS Hydrocarbon generator:

- ✓ Low noise
- Clean gas emissions
- Low carbon content, no particles
- No NOx

Advantages VS electrical batteries:

- long term stable energy storage
- ✓ High storage capacity (>500 Wh/I)

Advantages VS high pressure  $H_2$  reservoirs:

- $\checkmark$  Fast, easy and safe logistics
- ✓ High storage capacity (53 kg/m³)





# AVAILABILITY

Delivery time: 20 weeks

# SPECIFICATIONS (demo unit)

| $\checkmark$ | Fuel cell type:              | low temp. PEMFC    |
|--------------|------------------------------|--------------------|
| $\checkmark$ | Fuel:                        | formic acid        |
| $\checkmark$ | Nominal electrical power:    | 850 W              |
| $\checkmark$ | Peak power:                  | 1 000 W            |
| $\checkmark$ | Nominal thermal power :      | 1 000 W            |
| $\checkmark$ | FC efficiency:               | 44-45%             |
| $\checkmark$ | Temperature heating circuit: | 65 °C              |
| $\checkmark$ | Start time appr.:            | 60 min (cold)      |
|              |                              | 30 min (hot)       |
| $\checkmark$ | Load range:                  | 30%-100%           |
| $\checkmark$ | Dim. (w x h x d) mm:         | 740 x 1.150x 1.159 |
| $\checkmark$ | Weight :                     | 380 kg             |

### APPLICATIONS

- Demonstration of electric power generation for infrastructure in off-grid or with limited grid capacity areas:
  - telecommunications towers
  - devices of emergency services
  - remote control
  - Etc.
- ✓ A part of a formic acid based **energy storage** system (HCOOH ⇔  $H_2$  +  $CO_2$ )
- Supports the Fuel Cell deployment with liquid fuel management advantages.

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