



Arco Technologies Inc

# Arco Technologies

## Advanced Energy Systems

Powering the future

DATA SHEET

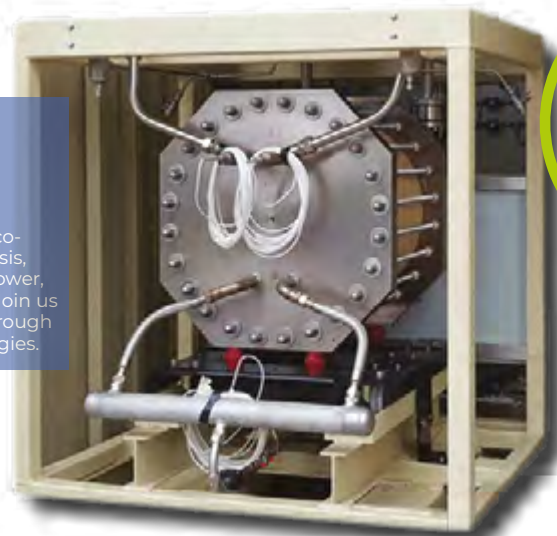
## SUPERNOVA

High pressure AEM electrolyzers for green hydrogen



### GREEN HYDROGEN

Presently, just 1% of hydrogen is eco-friendly, created through electrolysis, harnessing hydro, wind, or solar power, and yielding zero CO<sub>2</sub> emissions. Join us in shaping a sustainable future through cleaner, green hydrogen technologies.



### Typical application areas

- Refining:
- Industry:
  - Ammonia Production (60 %);
  - Methanol (30 %);
  - Direct Reducing Iron (10%) in iron and steel subsector.
- Transport:
  - FCEVs
    - ▷ Cars;
    - ▷ Bus;
    - ▷ Heavy-duty vehicle;
    - ▷ Material Handling
  - Hydrogen Refueling Station
  - Rail
- Shipping: Hydrogen fuel cells and Hydrogen combustion for zero-emission technologies
- Aviation: low-emission hydrogen based fuels.
- Electricity Generation:
- Production of Hydrogen-based fuel: such as ammonia or synthetic hydrocarbons
- Reducing Agent in 100%-Hydrogen DRI.

### AEM advantages

- Dilute Liquid Electrolyte: providing
  - higher efficiency;
  - tolerance to impurities;
  - flexible electrode design;
  - advantages in large systems;
  - shunt currents are reduced.
- PGM (Platinum grade materials) free: non-noble metal catalysts for both the HER and the OER to reducing the capital cost.
- High Current Density and High Differential Pressures:
  - up to 80 bar;
  - small footprint;
  - compact design;
- Simplified Balance of Plant
  - improved material compatibility for supporting equipments;
  - fewer safety concerns.
- High Purity Hydrogen and oxygen as a byproduct
- AEM is an extremely promising technology to reduce the capital cost of electrolysis systems

Electrolyzer Model	4 - 30	10 - 30
Nominal hydrogen flow rate	4 Nm <sup>3</sup> /h – 8.4 kg/day	12 Nm <sup>3</sup> /h – 25 kg/day
Operation range	40 ÷ 100 % of nominal flow rate	
Operating pressure	8 / 30 / 80 barg	
Hydrogen purity @ nominal flow rate	as per SAE J2719 and ISO 14687-2	
Average energy consumption	4.8 kWh/Nm <sup>3</sup>	
Power Supply	3 phases AC power / 50÷60 Hz	
Nominal Consumption (active power)	20 kW	60 kW
Installation	Indoor	
Conformity	<ul style="list-style-type: none"> <li>– Machine Directive, 2006/42/CE</li> <li>– Electromagnetic Compatibility Directive, 2014/30/EU</li> <li>– Pressure Equipment Directive, 2014/68/EU</li> <li>– Equipment for potentially explosive atmospheres Directive, 2014/34/EU</li> </ul>	

## Arco Technologies general description

Arco Technologies is at the forefront of the clean energy sector and in promoting a low-carbon transition through its proton exchange membrane (PEM) cells and, more recently, anion exchange membrane (AEM) electrolyzers. With over 20 years of experience in hydrogen-related electrochemical technologies, we have developed expertise in all aspects, from electrodes to stacks and system equipment, making us experts in system integration as well. In addition to offering a portfolio of standardized products, we develop custom solutions for clients and provide support during the integration phase.

### Arco Technologies inc

444 Somerville Ave  
Somerville MA 02143  
USA

### Arco Technologies srl

Via Badini 21  
Granarolo Dell'Emilia (BO) 40057  
Italy

Phone: +39 051 852828  
Email: [info@arco.tech](mailto:info@arco.tech)  
[sales@arco.tech](mailto:sales@arco.tech)  
Web: [www.arco.tech](http://www.arco.tech)