

GENCELL REX™

The substation backup power solution
with the X factor - eXtended runtime

- Zero emissions, no noise and no vibrations
- Extends battery room operation from 4 to 72 hours
- Failsafe internal redundancy between stacks ensures highest reliability
- IEEE 693 seismic certification, tested & proven in harsh weather conditions
- Integrated monitoring software





THE POWER CHALLENGE

Aging electrical grids and more frequent extreme weather make it increasingly challenging to meet the power needs of always-connected businesses and consumer lifestyles. In 2015, Americans experienced a reported 3,571 total outages, with an average duration of 49 minutes. Momentary blackouts cost the US economy 60 billion USD while sustained blackouts cost 50 billion USD.

GENCELL REX™ UTILITY BACKUP POWER SOLUTION

The GenCell REX™ utility backup power solution produces 5kW of auxiliary electricity for substations during outages of any duration. Operating as a direct source of backup power or supplementing legacy backup battery systems that can provide only 6-8 hours of electricity, the GenCell REX solution offers an immediate injection of power that keeps circuit breaker “auto reclosers” operational until the grid recovers.

The GenCell REX solution overcomes the significant weaknesses of the most common legacy alternatives: the high cost of multiple battery rooms and the smell, noise and lengthy startup time of diesel generators. Fueled by hydrogen, the clean energy of the future, the GenCell REX power solution produces no emissions, noise or vibrations, and includes a shelter that is resistant to high-voltage interference and earthquakes.

The GenCell REX is an enhanced version of the GenCell G5rx solution, available in three configurations, 130VDC, 48 VDC and an integrated solution offering a dual output of both 130/48VDC in a single unit supporting in parallel critical substation loads as well as internal communications and SCADA systems that monitor the utilities' operations.

Furthermore, the solution incorporates enhanced integration with leading utility SCADA systems alongside improved functionality of the GenCell Remote IoT Manager software that affords utilities expanded remote control of the REX as well as improved visibility of the equipment via additional data points that can be accessed by the utilities' monitoring systems.

HYDROGEN: THE CLEAN FUEL OF THE FUTURE

Hydrogen is the lightest and most abundant element in the universe and is considered the most environmentally friendly fuel. Hydrogen is a flammable fuel but has been proven to be as safe or even safer than gasoline or natural gas (methane) as it is lighter than air and quickly dissipates into the atmosphere.

Fuel cells oxidize hydrogen in a chemical reaction to form electricity, heat and water. Since they do not rely on the combustion of fuel, fuel cells do not produce any CO₂ or greenhouse gases. When powering a backup power solution, hydrogen fuel cells can advance a utility's efforts to produce clean energy while improving their service reliability.



THE SOLUTION



1. 5kW fuel cell generator
2. Heat utilization unit for dissipating excess heat
3. Energy bridge for instant electrical power generation and regulating power output
4. Fuel supply comprised of standard hydrogen cylinders
5. Shelter enclosure to protect all system components (#1-4)

SPECIFICATIONS

PERFORMANCE

Rated Power Configurations	5kW
Output voltage configurations	-48 VDC / +48 VDC / 230 VAC / 130 VDC
Emissions	Usable heat, water vapor

FUEL

Hydrogen	99.95% or higher
Fuel consumption	70 g/kWh
Input pressure	300-500 kPa
Storage	Up to 6 standard hydrogen cylinders

ELECTROLYTE

Potassium Hydroxide	28-32% mass
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OPERATION

Startup time	Immediate ¹
Automatic start/stop	Available
Installation	Outdoor
Remote control/management (NOC)	Available

MAINTENANCE

Every 500 hours of operation or annually, whichever comes first

PHYSICAL

Footprint	2,800 x 2,250 x 2,500 mm (110.2 x 88.6 x 98.4 in.)
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NORMAL OPERATING CONDITIONS

Operating Temperature	From -20°C up to +45°C (-40°F up to +113°F)
Relative humidity	Up to 90%
Storage Temperature	-40°C up to +55°C (-40°F up to +131°F)

CERTIFICATION²

IEC/EN 62282-3-100, IEC 60950-1, IEC 60204-1, IEC 60335-1, EN 61000-6-2, EN 55011
 IEEE693-2005 (Seismic, High Performance Level), OSHA1910.103,
 IEEE Std C37.90.1-2012 Sections 4.1, 4.2
 EMC: EN55011/EN61000-6-2
 ISO9001:2015
 IEEE 693 (Seismic design)

¹ When using a GenCell Energy Bridge or existing customer battery bank.

² Certifications are for the fuel cell generator and shelter.

ABOUT GENCELL

GenCell Energy GNCL (TASE) develops total green power solutions based on reliable, zero-emission alkaline fuel cells and green ammonia-to-energy technology which deliver uninterrupted power to help the world #SayNoToDiesel and transition to clean energy. The ability to produce not only clean power from GenCell's fuel cells, but also the green fuel on which the fuel cells run, sets GenCell in a far superior position as a well-to-wheel total green energy solution provider. GenCell delivers resilient, robust and weather-resistant backup power for utilities, telecom and other mission-critical applications which have been deployed in 22 countries. Our hydrogen-on-demand solution provides primary power for off-grid and poor-grid sites, as well as for rural electrification.

GenCell Energy numbers more than 110 employees, including veterans of space and submarine projects. The Company is headquartered in Israel with a worldwide distribution and support network and retains unique intellectual property that includes patents, trade secrets and know-how.

FOR MORE INFORMATION, VISIT US AT WWW.GENCELLENERGY.COM