



GENCELL G5™

System Description 48VDCTM

- Immediate injection of power with unlimited run-time
- Power back up critical control equipment
- Meets telecom energy profiles and safety standards
- Zero emissions, no noise and no vibrations
- Remote monitoring



GenCell G5™ Long-Duration UPS 48VDC



Figure 1. 48VDC System

1. Electrochemical generator
2. Heat utilization unit for dissipating excess heat
3. Energy bridge for converting electrical power and regulating power output
4. The fuel supply can be comprised of several hydrogen cylinders
5. Nitrogen supply comprised of one nitrogen cylinder

General Functional Diagram

Figure 2 shows block diagram with functional connection.

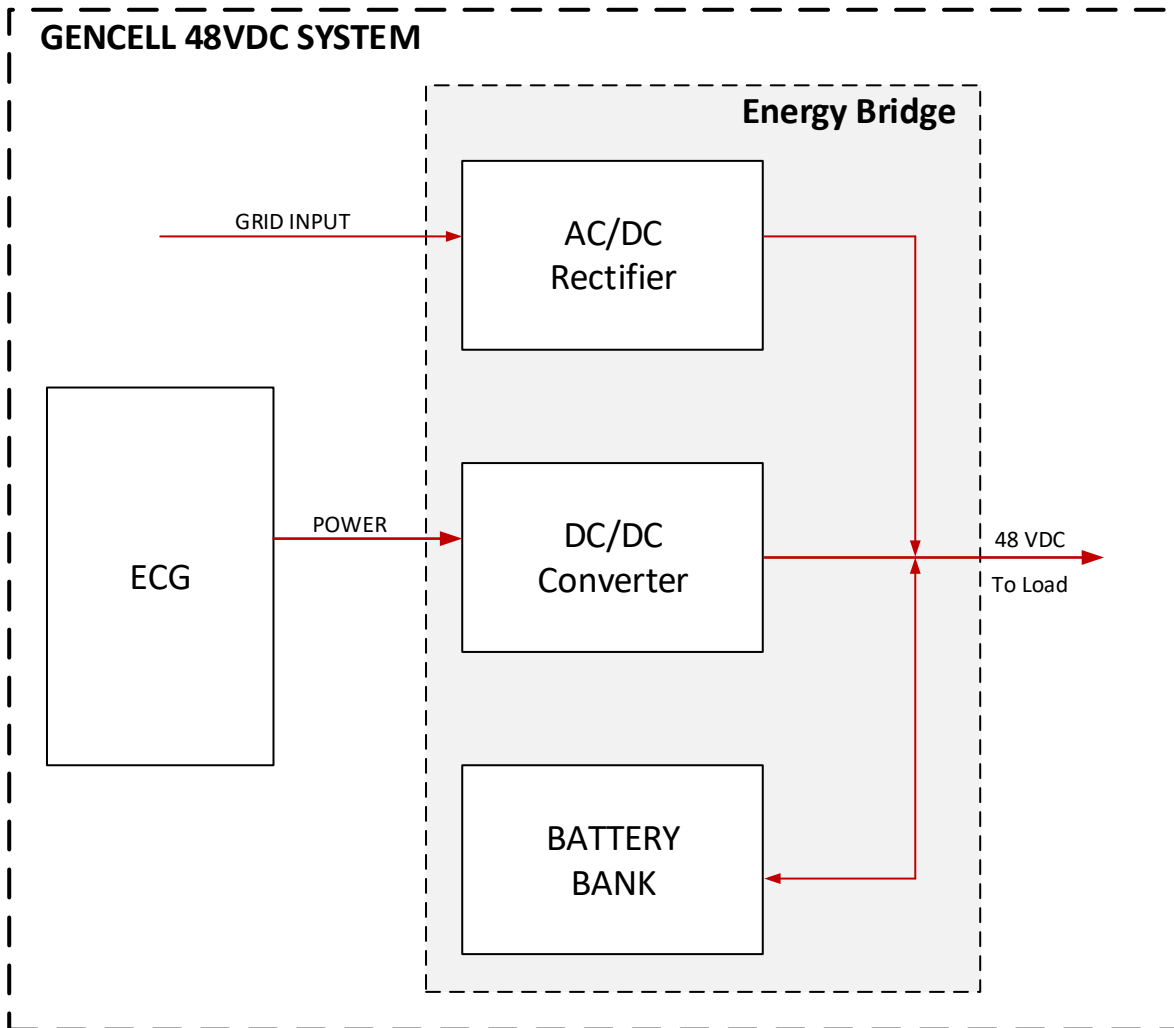


Figure 2. 48vdc System General Functional Diagram

Energy Bridge

Figure 4 shows Energy Bridge (EB) with main components.

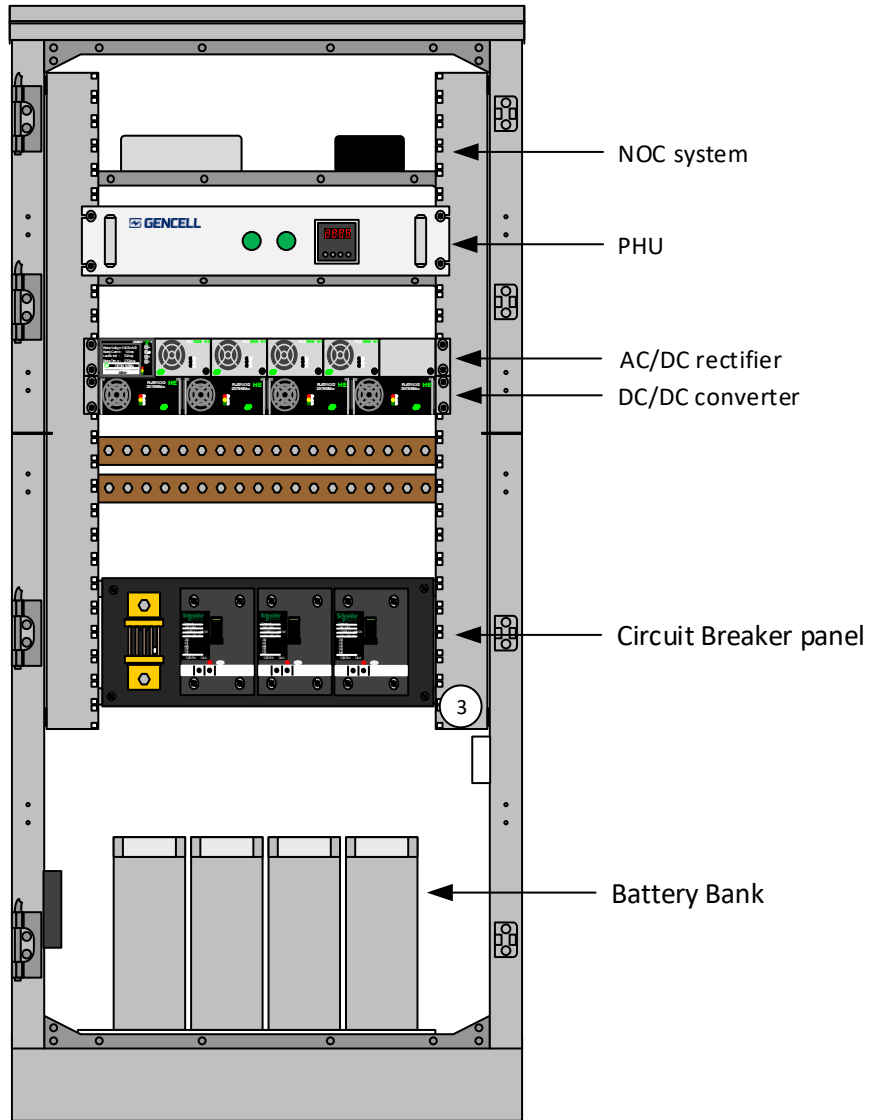


Figure 4. ENERGY BRIDGE

Specification

DC Output Specification

Nominal voltage	48 VDC
Power (maximum)	5 kW
Current	104.1 A
Static Voltage regulation (0 - 100% load)	±0.5 %
Ripple, 20MHz bandwidth	< 200 mVpp
Emissions	Usable heat, water vapor

AC Input Specification

Voltage (nominal)	176 - 275 VAC
Frequency	45 - 66 Hz
Current (maximum)	60 ARMS
Power Factor	> 0.99 at 50-100% load

Fuel

Hydrogen	99.95% or higher
Fuel specific consumption at maximum power	70 g/kWh
Input pressure	300-500 kPa

Electrolyte

Potassium hydroxide (KOH)	28-32% mass
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Operation

Automatic start/stop	Included
Installation	Indoor (outdoor only in a container)
Remote control/management (NOC)	Optional

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 Operation Conditions

Operating temperature	-20°C up to +45°C (-4°F up to +113°F)
Relative humidity	Up to 90%
Storage temperature	-20°C up to +55°C (-4°F up to +131°F)

Certification

Electrochemical Generator (ECG)	TÜV-Rheinland EC Declaration of Conformity The Standards Institution of Israel EMC: EN55011/EN61000-6-2 IEEE 693 (Seismic design)
AC/DC Rectifier	Electrical Safety: UL 60950-1, EN 60950-1 EMC: ETSI EN 300 386 EN 61000-6-1 / -2 / -3 / -4 TS 61000-6-5 FCC CFR 47 Part 15 Environment: ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant
DC/DC converter	Electrical Safety: UL 60950-1, EN 60950-1 EMC: EN 61000-6-1 / -2 / -3 / -4 ETSI EN 300 386 V.1.4.1 Environment: ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant