AMOLION

SYSTEM DATASHEET

SGP — Smart Grid Power

Hybrid, multi-source power plant · 1.88 MW/h · 24/7 · off-grid microgrid.

Technical report · 2026

EXECUTIVE SUMMARY

Clean, continuous and independent digital energy.

SGP is a hybrid, multi-source, three-phase, low-voltage, autonomous and permanent power plant, mounted in a 40-foot container, delivering **1,880 kW/h (1.88 MW/h)** of clean power **24/7**, in an **off-grid microgrid** configuration.

It does not compete with the macrogrid — it **completes** the distribution model, serving data centers, mining, steel mills, the paper sector, agribusiness and remote areas.

FUNDAMENTAL CONCEPT

Technical specifications.

System type	Hybrid, multi-source plant	Technology	Electromechanical & electro-digital generation
Container	40 ft · 16,000 kg	Output power	1,880 kW/h (1.88 MW/h)
Voltage	220–600 V · low/medium voltage	Frequency	50 Hz or 60 Hz
Operation	Continuous 24/7 · IoT + AI	Warranty	100,000 h (max. 150,000 h)
Certifications	TÜV · Intertek · CCC · CE · ESG	Emissions	Zero · >5,000 t CO_2/year avoided per MW

In numbers.

1,88 MW/h
Continuous power

24/7
Permanent operation

100k h
Warranty (max. 150k h)

0
Fuel and emissions

SUBSYSTEMS

System architecture.

Generation	4 synchronous generators, continuous operation, double bearing
HVAC	48,000 BTU, 22 °C, for high-performance processing
Fire safety	Firebee FHT 15 A unit, sealed suppression
Connection	Plug-and-play, underground cabling up to 5 km
Distribution	Digital transformer, 100–600 V, three-phase, 100–1200 A
Pressurization	Operates at any altitude, reduces atmospheric effects
Grounding	Shielded and sealed, IEC compliant; immune to EMFs and discharges
Digital energy	3–5× more efficient than conventional analog energy

CONTROL & COMMUNICATION

Intelligence and redundancy.

IA + IoT

Real-time sensors and operated redundancy.

Digital twins

Remote control, global predictive and preventive monitoring.

Communication

Redundant satellite; internal Bluetooth.

Batteries

Smart backup up to 60 hours.

Data

90 days in real time; cloud storage beyond 360 days.

Cybersecurity

Built-in blockchain, tamper-proof protocols.

Compliance and independence.

INTERNATIONAL STANDARDS

Qualidade de energia igual ou superior aos padrões **IEC**. Certifications **TÜV, Intertek, CCC, CE e ESG**. Imune a eletrochoques, EMFs e descargas atmosféricas. Operação silenciosa e *shockproof*.

GEOGRAPHIC INDEPENDENCE

Operates at any **longitude, latitude and altitude**. Requires only a flat, dry area on levelled anti-vibration mounts. Up to **5 km** of underground cabling to the grid.

POSITIONING

It does not compete with the macrogrid — it completes it.

- → Fills the gaps where the macrogrid does not reach.
- → Plug-and-play with grid, off-grid and EV networks.
- → Off-grid microgrid, independent and autonomous.
- → Real-time bidirectional supply, with no waste.

STRATEGIC APPLICATIONS

Where SGP delivers.

Data centers
24/7 bidirectional, cyber-secure, grid-ready power.

Mining / Bitcoin
24/7, zero fuel, 3–5× lower cost.

Ore extraction
Remote areas, continuous and independent operation.

Steel mills
High power (1.88 MW), three-phase, low maintenance.

Paper sector
100% green energy, ESG compliant.

Agribusiness
Rural electrification, eco-friendly pumping and irrigation.

Remote areas
Healthcare, telecoms, lighting, electrification.

+ sectors
Any operation that requires clean, continuous energy.

Competitive advantages.

- ✓ **Zero fuel** — no diesel, gas or coal.
- ✓ **Zero emissions** — >5,000 t CO_2/year per MW.
- ✓ **Bidirectional** — real-time supply and return.
- ✓ **Deployment within 270 days**.
- ✓ **3–5× more economical** — efficient digital energy.
- ✓ **Cybersecurity** — blockchain, tamper-proof.
- ✓ **Predictive maintenance** — digital twins.
- ✓ **Leasing model** and service provision.

Clean, continuous energy, independent of geography.

1.88 MW/h · 24/7 · 100,000 h warranty · IEC/TÜV/Intertek/CCC/CE/ESG compliant — offered by leasing from Amolion Energy.

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