PowerUP
ENERGY TECHNOLOGIES

Vogt-CTE

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Stealth power source for defence & security appplications

PowerUP hydrogen fuel cell powered electricity generators are preferred option for defence & security operations due to their superior portability, durability, power to weight ration, low noise & heat signature. PowerUP electricity generators are used across the world as main power, back-up power or as battery capacity extenders.

- COMMUNICATIONS
- MILITARY DRONES
- GROUND OPERATIONS
- REMOTE RADAR STATIONS
- OPERATION CENTERS
- OTHER DEVICES
- SOLDIER CAMPS

Tested on the Field
by NATO forces

- → Tested by **NATO Energy Security Centre of Excellence** with "**highly recommended**" credits
- → Tested for **portability**, **stealth**, **resilience**, and **field capabilities** for a variety of different applications during military exercises, including in NATO's largest exercise, Steadfast Defender 2024, with **90,000+ troops** from all **32 NATO Allies**
- → Different systems deployed for **ground combat**, **mobile equipment**, and **off-grid military infrastructure**

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Empowering Independence

The Frontier of Off-Grid Energy Solutions

PowerUP's hydrogen fuel cell generators offer strategic advantages over traditional generators. They enhance efficiency and cost savings, especially when used alongside batteries, photovoltaic panels, and similar technologies.

- **Stealth** – low noise, vibration, and heat signature
- **No emissions**, no smoke, no odours
- **Mobility** – ultra-portable, lightweight
- **Rugged** – durability & self-diagnostic capabilities
- **Fuel** can be stored **indefinitely** with near 0 loss
- **H2** (cylinders) can be stored virtually indefinitely with **minimal attrition or supervision**, optimizing logistics

Diesel requires replacement every 6–12 months, and stored drums take up significant space and demand constant monitoring. Additionally, batteries gradually lose stored energy over time due to climate conditions, while also providing a relatively lower power output for their size.

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UP400

First Step in Energy Independence

UP400 is a perfect starting point for off-grid power needs, and it allows full grid independence when connected to solar panels, wind turbines, or even your electrolyser.

Nominal power output	400 W
Nominal output voltage	12/24 V
Current at 24 V	34.7 A
Fuel	Compressed hydrogen (>99.97%)
Fuel consumption at max power	5.2 normal l/min (26 g/hour)
Dimensions (L × W × H)	700 × 222 × 312 mm
Weight	21 kg
Operating ambient temperature	-5°C to 40°C
Noise level	45 dB

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UP1K

Reliable Backup Power for Critical Needs

This 1 kW generator is an ideal solution for disaster relief or powering tools in the construction or defence sector. Pair it with batteries, solar panels, or wind turbines for a smart microgrid.

Nominal power output	1000 W
Nominal output voltage	12/24 V
Current at 24 V	41.7 A
Fuel	Compressed hydrogen (>99.97%)
Fuel consumption at max power	13 normal l/min (65 g/hour)
Dimensions (L × W × H)	700 × 222 × 410 mm
Weight	27 kg
Operating ambient temperature	-5°C to 40°C
Noise level	45 dB

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UP3K

Revolutionising High-Demand Backup Power

The UP3K is a 3 kW hydrogen fuel cell generator designed to meet the critical demands of the defense and security sector. Whether powering field operations, serving as a backup for command centers, or charging essential equipment, the UP3K ensures reliable energy in remote and high-stakes environments. Its modular design enables scalable power solutions, supporting both standalone and hybrid setups for maximum operational flexibility.

Beginning of life (BOL) Continuous output power at 25°C Continuous output power at 40°C	 3000 W 2500 W
After operation time >5000 h Continuous output power at 25°C Continuous output power at 40°C	 2500 W 2000 W
System nominal voltage	48 V DC
Fuel	Compressed hydrogen (>99.97%)
Fuel consumption	0,065 kg/kWh at 0.5 bar(g) input pressure
Dimensions	(L x W x H) 589 × 304 × 578 mm
Weight	42 kg
Communication / Protocols	CAN (optional: RS485, Bluetooth, USB)
Recommended temperature range	-5°C to +40°C (-30°C to +40°C with accessories)
Noise level	65 dB

Features

- → **Grid drop detection**
- → **5x I/O connections**
  (3x dry contact detection,
  2x programmable relays)
- → **Remote monitoring and control**
- → **Different working modes**
  (Battery mode, Generator mode)
- → **Wide range of supported batteries**

Optional

- → **19" Rack solutions** (Indoor/outdoor)
- → **Trailer based mobile solution available**
  (UPMobile)

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UPMobile

Reliable Hydrogen Power, Wherever You Go

UPMobile is available with either 3kW or 6kW of continuous fuel cell power. This versatile hydrogen fuel cell generator is an ideal solution for the military industry, ensuring uninterrupted access to power and other utilities to maintain readiness and critical services in tactical operation centers during missions. The powerful UPMobile boasts an external hydrogen supply for enhanced flexibility and can be easily transported on a trailer.

System voltage (VDC)	42–75 VDC		
Output voltage	42–75 V DC	230 V AC (1P)	400 V AC (3P)
Output current (A)	0–300 A		
Nominal power (kW)	10 kW (BOL) – 9 kW (EOL)		
Rated power (kW)	15 kW (w/o battery)		
FC peak power output (kW)	16,4 kW		
Battery extender capacity (kWh)	6,8 kWh (1 module)		
Battery extender peak power (kW)	34 kW (12 min – 5C)		
Cooling system	Deionized water (0.1 us/cm)		
Fuel	Compressed hydrogen (>99.97%)		
Fuel consumption per kWh	60–73 g/kWh		
Size (L × W × H)	1900 × 1500 × 1500 mm		
Weight (kg)	220 kg		
Start temperature (°C)	> -10°C		
Operating temperature (°C)	from 5°C to 60°C		
Operating hours (h)	20 000 h		
IP rating	IP54		
Noise level	65 dB		

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Features

- Screen
- Service monitoring
- IoT: Full system logs
- Remote monitoring and control
- Start/stop signal

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Hydrogen safety and consumption

Safety is paramount at PowerUP, and to uphold this commitment, we've designed a specialized hydrogen safety system for our indoor fuel cell generators. This stand-alone system employs an off-the-shelf hydrogen sensor to detect leaks, automatically closing the valve to prevent further leakage until manual reset. With simplified implementation and user-friendly design, it ensures robust functionality and safety for fuel cell generators in rooms up to 60 m^3. But it does not end there. Already during our production process we are using high quality 316 stainless steel tube and pipe fittings, assembled by skilled technicians to ensure maximum quality of the internal gas distribution system.

Multiple sensors and ATEX rated solenoids are securing leakage free operation and a safe handling of leaked hydrogen should it occur. With inner and outer safety regulated by different controllers we achieve maximum safety and redundancy.

PowerUP's products require pure hydrogen, demanding a purity level of ≥99.95% (Hydrogen 3.5 or higher). Impurities are tolerated within the limits of EN 17124. Maintaining high hydrogen purity is essential for achieving optimal performance, longevity, reliability, efficiency, and environmental benefits in our generators.

Different cylinder options	**9 l** (300 bar) ~3.5 kWh	**26 l** (300 bar) ~10 kWh	**50 l** (200 bar) ~13 kWh	**2 × 50 l** (200 bar) ~26 kWh	**12 × 50 l** (200 bar) ~156 kWh
400 W	9 h	25 h	32 h	64 h	384 h
1 kW	3 h 30 min	10 h	13 h	26 h	156 h
3 kW	1 h 10 min	3 h 20 min	4 h 30 min	9 h	52 h
15 kW	13 min	36 min	48 min	1 h 36 min	9 h 23 min

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Get in touch
to find a solution
that fits your needs:

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