



SFC
ENERGY

Combat Proven Solutions for your Operation

Fuel Cells
Power Management
Energy Network
Power Supplies

sfc-defense.com

SFC Energy

Power Solutions for Tactical and Mission Critical Applications



Portable
Power Supply



Tactical on-board
Power Supply



Remote
Power Supply



Power Supplies for
High Energy Lasers



H₂ Energy
Solutions



Arctic
Hybrid Power



Border
Security

Reliable power supply is one of the major technical challenges for modern task forces

SFC Energy fuel cells recharge batteries and power equipment automatically – in the vehicle or worn on the crew. They run near-silently with virtually no signature, ideal for covert operations, and are flexible, safe, and plug-and-play. Available in military-hardened or industrial versions.



For more information
please visit our
website at
sfc-defense.com

SFC Fuel Cell Technology

No detectable signature

SFC Fuel Cells are characterised by virtually silent, emission-free operation with minimal detectable signature, making them a top choice for modern military operations. For example, the SFC EMILY Fuel Cell charges a vehicle's on-board battery automatically and quietly, without detection. It ensures the operation of onboard systems even when the engine is switched off, allowing full camouflage to be maintained.

Diesel Generator

Heat Emission
450-600 °C

Sound Emission
80-100 dB (A)

Fuel Cell

Heat Emission
30-60 °C

Sound Emission
48 dB (A)



You can find more information on the technology at sfc-defense.com

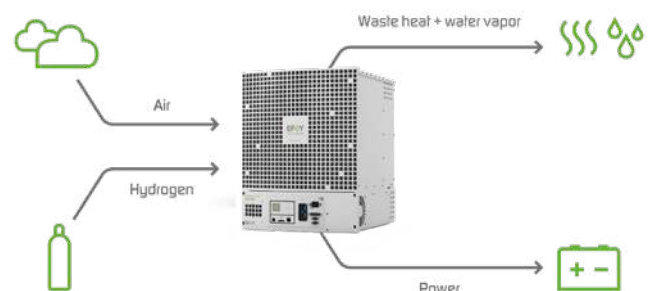


Direct methanol technology

SFC direct methanol fuel cells charge batteries fully automatically. The integrated charge controller permanently monitors the battery's state of charge. If the battery's state of charge falls below a certain level, the fuel cell is automatically started and put back into stand-by mode when the battery is charged. This significantly extends the service life of the battery by protecting it from harmful deep discharge. For your application, this means long autonomy without user intervention.

Hydrogen technology

Proton Exchange Membrane (PEM) technology constitutes the basis for the EFOY Hydrogen fuel cells. They use hydrogen as a fuel, which is converted into electricity together with oxygen from the air. The direct conversion of hydrogen into electricity only leads to the generation of water vapor, which is extremely environmentally friendly. As soon as the battery voltage falls below a certain threshold, the hydrogen fuel cell starts operating and takes over the power supply of your application.



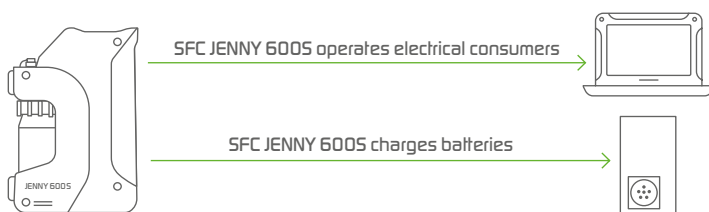
SFC JENNY 600S and 1200 Fuel Cells

The compact, portable power generator

Modern task forces need a portable, reliable power supply for their technical equipment. The JENNY 600S and JENNY 1200 fuel cells generate reliable and fully automatic power to supply electrical equipment in the field. They significantly reduce the number of spare batteries and are easy to carry in a backpack. Up to 80% battery weight can be saved on a 72-hour mission. Operation is simple and produces almost no detectable noise or heat signatures. This allows the soldier to plan with a minimum of batteries and carry additional food, water and ammunition due to the weight and volume saved. Together with the SFC Power Manager 3G, several consumers can be supplied with power simultaneously and very efficiently.



Application



SFC JENNY fuel cells supply electrical devices in the network

Advantages

-  Fully automatic & reliable
-  80% weight reduction
-  No recognizable signature

The SFC JENNY fuel cells are already installed at several international defense organizations.

NSPA - NATO SUPPORT AND PROCUREMENT AGENCY
Available via NSN (Nato Stock Number)

Worth knowing

- ⚡ The SFC JENNY products are military hardened, specified and tested
- ⚡ SFC JENNY 600S and 1200 as well as the fuel cartridges have a NATO supply number
- ⚡ SFC fuel cartridges are approved for air transport according to UN3473



Technical data¹



Fuel Cell

SFC JENNY 600S

SFC JENNY 1200

Charging performance per day	600 Wh	1200 Wh
Rated power	25 W ²	50 W ³
Output voltage	10 – 30 V DC ⁴	10 – 30 V DC ⁴
Weight	1.7 kg	3.3 kg
Dimensions L x W x H	184 x 74 x 252 mm	214,5 x 96 x 264 mm
Operating temperature		
with fuel cartridge Regular	-32 °C up to +35 °C	-20 °C up to +49 °C
with fuel cartridge Desert	+10 °C up to 55 °C ⁵	
Noise emission	undetectable above 30 m	undetectable above 20 m
Military hardening and electromagnetic compatibility	MIL-STD	
NATO Stock no.	6116-12-388-1051	6116-12-404-4148

¹ All technical data at test conditions of 20 °C / 68 °F.

² The energy output may be temporarily lower if an altitude of 3000 meters is exceeded.

³ The energy output may be temporarily lower if the temperature is above +40 °C or an altitude of 2500 meters is exceeded.

⁴ Voltage self-adjusting when using SMBus communication, SMBus batteries and SFC Power Manager 3G or manual setting.

⁵ In the temperature range from +50 °C to +55 °C, operation is only possible for a limited time. For hot climates, the M0.35 Desert fuel cartridges is available.



SFC EMILY 3000 Fuel Cell

Mobile power supply in the field and on-board power supply in mission vehicles

The SFC EMILY Fuel Cell is the preferred solution for supplying power to on-board electronics in vehicles. It recharges the on-board battery in the vehicle fully automatically, efficiently and quietly, without the need for a vehicle engine or the operation of a noisy diesel generator, thus maintaining stealth. The SFC EMILY 3000 is low-maintenance and capable of charging all common lead-acid batteries in addition to modern lithium batteries. The virtually signature-free, silent and emission-free operation characterizes the SFC EMILY 3000 and makes it the first choice of modern deployed forces. It is also suitable for use in the field, dismantled from the vehicle, as a mobile charger for batteries and energy storage systems in combination with the SFC Power Manager 3G. Applications such as radios and radar systems can be powered or multiple batteries can be recharged simultaneously.



Advantages

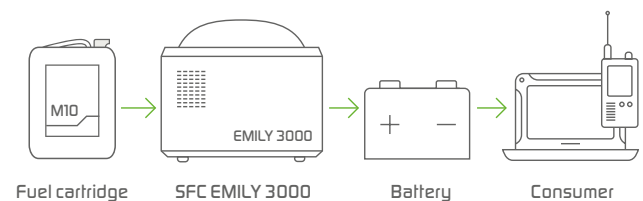
-  No recognizable signature
-  Fully automatic & reliable
-  Easy operation

Technical data¹

Charging performance per day	3000 Wh
Rated power ¹	125 W (Begin +10 % / After 3000 h -10 %)
Output voltage	12 V / 24 V other voltages adjustable
Rated current @ 12 V / 24 V ¹	10 A (limited) / 5.2 A
Weight	12.5 kg
Dimensions L x B x H	476 x 206 x 286 mm
Running time with M10 fuel cartridge ¹	up to 88 hours at 3000 Wh/day
Operating temperature	-25 °C bis +50 °C
Military hardening & electromagnetic compatibility	MIL-STD
NATO Stock no.	6116-12-404-4148

¹ All technical data at test conditions of 20 °C / 68 °F.

Application



Worth knowing

- ⚡ The SFC EMILY 3000 and the methanol fuel cartridges have a NATO supply number
- ⚡ The fuel cartridges are approved for air transport according to UN3473
- ⚡ The SFC EMILY 3000 can also be used as remote power supply
- ⚡ Reduce fossil fuel footprint and dependence on fuel convoys



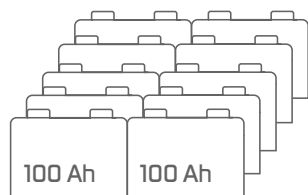
Weight reduction

Energy content of M10 fuel cartridge = 10 pieces of 100 Ah lead acid batteries @12V



1 x M10
8.4 kg

Energy capacity
11.1 kWh



10 x 100 Ah Lead batteries @12 V
approx. 250 kg

Energy capacity
12 kWh



For more information please visit our website at sfc-defense.com



Used to charge drone batteries in the field. It provides silent, emission-free, off-grid power without the thermal and acoustic signatures associated with traditional diesel generators, allowing for covert drone operations.

SFC Power Manager 3G

Portable and intelligent power distribution

The multitude of electrical devices in the field demands intelligent power management. The SFC Power Manager 3G enables soldiers to use all available power sources — hybrid batteries, solar panels, vehicle power, and fuel cells — for recharging batteries or powering loads. Via intelligent cable coding, it automatically detects connected devices and adjusts output voltage accordingly, minimizing power losses and maximizing efficiency. No separate chargers needed: less weight, more space. The SFC Power Manager 3G is already in service with the U.S. Air Force, the German Bundeswehr, and numerous other defense organizations.

Advantages



Small & lightweight



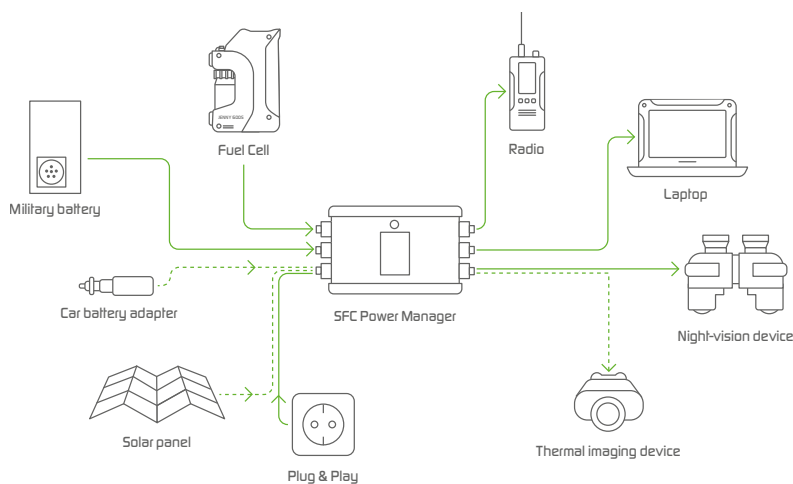
Plug & play



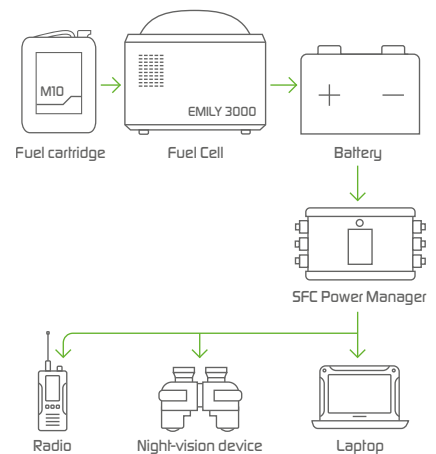
Robust



Application



With SFC JENNY600 S



With SFC EMILY 3000



Worth knowing



Expandable by all tactical SFC Fuel Cells – these can serve as power source for the SFC Power Manager 3G



New consumers can also be added later via a specific cable



In national and international field use since 2010

Technical data¹

Weight	520 g
Dimensions L x B x H	162 x 95 x 36 mm
Display	LCD full text display
Connections	2 high power inputs/outputs (430 W) 2 power inputs/outputs (65 W) 2 power outputs (65 W)
Voltage range	8 - 33 V DC
Current carrying capacity	5 A / 13 A
Power range	max. 430 W
Communication interface	SMBus (SMBus v 1.0 or higher)
Protective devices against	Overvoltage, overload, short circuit, reverse polarity, overheating, waterproof IP65
Operating temperature	-32 °C up to +55 °C
Military hardening and electromagnetic compatibility	MIL-STD and VG-Norm
NATO Stock no.	6130-12-377-4931

¹ All technical data at test conditions of 20 °C / 68 °F.



EMILY 12000

Tactical fuel cell power

Modern defense operations demand more power. The EMILY 12000 delivers. Building on over 20 years of field-proven DMFC technology, it provides up to 500 W continuous output and 12,000 Wh per day — four times the capacity of the battle-tested EMILY 3000. Multiple units can be clustered to supply up to 5 kW. Near-silent, emission-free, low-signature operation. Vehicle-mounted or dismounted. Powering communications, UAVs, sensors, and IT infrastructure — wherever the mission takes you.

The product is currently in the development phase and its appearance may differ from the final version.

For more information please visit our website at sfc-defense.com



Maximum energy with little volume

SFC fuel cells are operated with methanol as fuel. The methanol is filled into specially designed SFC fuel cartridges. Depending on the requirements, SFC fuel cartridges are available in different sizes: 0.35, 2.5, 5, 10, 28 and 60 liters. Thanks to the high energy density of methanol, SFC fuel cartridges offer a lot of energy in a small space.



Weight reduction

Two MO.35 (Regular) fuel cartridges

Energy content of 2 pieces MO.35 fuel cartridges
= 4 pieces BB2590



2 pieces MO.35

0.7 kg

Energy capacity

700 Wh

4 pieces BB2590

5.6 kg

Energy capacity

880 Wh

One M5 fuel cartridge

Energy content of 1 piece M5 fuel cartridge
= 25 pieces BB2590



1 piece M5

4.3 kg

Energy capacity

5.5 kWh

25 pieces BB2590

35 kg

Energy capacity

5.6 kWh

Technical data



Fuel cartridge	M0.35 Regular	M5	M10	M28 ¹
Capacity	0.35 l	5 l	10 l	28 l
Content	100 % Methanol	100 % Methanol	100 % Methanol	100 % Methanol
Weight	0.37 kg	4.3 kg	8.4 kg	23.4 kg
Electrical nominal capacity	up to 350 Wh	up to 5.5 kWh	11.1 kWh	31.1 kWh
Dimensions L x B x H	60 x 60 x 165 mm	190 x 145 x 283 mm	230 x 193 x 318 mm	370 x 285 x 395 mm ²
Self-sufficiency	@ 25 W: 14 hrs.	@ 50 W: up to 110 hrs.	@ 125 W: up to 89 hrs.	@ 125 W: up to 249 hrs.
NATO Stock no.	6810-12-376-4753	6810-12-382-0392	6810-12-382-0394	6810-12-382-0397

The M0.35 fuel cartridges are refillable with the SFC methanol refilling device.

¹ M28 adapter required

² Height with M28 adapter: 425 mm

According to the CLP Regulation, methanol is categorised as a poisonous and easily flammable substance. You can find more information in the safety data sheets in the download area of our website efoy-pro.com/downloads-en



Power Supplies for High Energy Lasers



19" scalable power supply solution for DC and pulse applications with safety interlock LAPS-R system

Support for AC and DC inputs enables integration into stationary, mobile and battery-based systems. The liquid-cooled design, the robust digital galvanically isolated interface and the double safety interlock (PLe) ensure stable and safe operation in mission-critical environments.

Advantages

-  Scalable Power
-  Reliability (>100.000 hours)
-  DC & AC Input
-  Closed & Liquid Cooled System
-  Safe PLe & Safety Standard

	LAPS-12000-R	LAPS-16000-R	LAPS-20000
Dimensions	19" 3U x 355mm	19" 3U x 460mm	19" 3U x 565mm
Power	12000 W	16000 W	20000 W
Output voltage	9-55 V / 15-90 V / 27-165 V	9-55 V / 15-90 V / 18-110 V	9-55 V / 15-90 V / 24-145 V

ACDC and DCDC power supply with safety interlock LAPS-4000 module

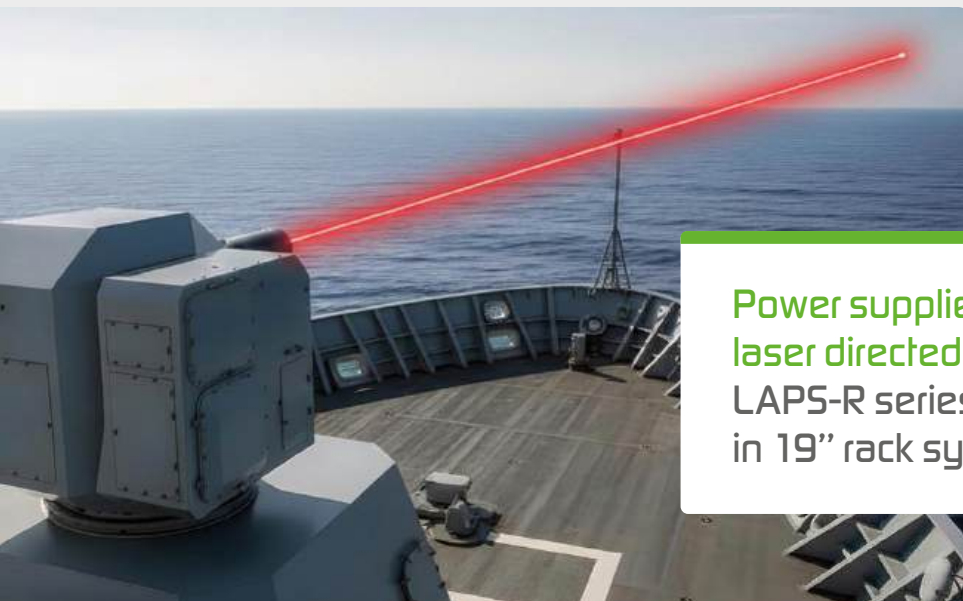
The low ripple and excellent transient response, together with the features like the safety interlock (PLe) and DC input capability, makes the LAPS-4000 one of the most innovative power supply solution in the market.



	LAPS-4000-55	LAPS-4000-90
Input voltage AC	180 V – 528 Vac, 3-Phase PFC 50/60 Hz, No derating at low line	180 V – 528 Vac, 3-Phase PFC 50/60 Hz, No derating at low line
Input voltage DC	220 – 500 VDC input capability	220 – 500 VDC input capability
Output voltage	9 – 55 V	15 – 90 V
Output current	0 – 80 A	0 – 53 A
Output power	4000 W	4000 W
Ripple and noise	<35 mVpp	<70 mVpp

Applications

Power supplies for radar systems
Ground mobile radar PSU
AC or DC input



Power supplies in high energy laser and
laser directed energy weapon systems
LAPS-R series, 8kW -MW+
in 19" rack systems

Power Supplies for Marine
Naval radar PSU: 65 W to 4 kW
Ruggedized and MIL-SPEC compliant



Find more information
on our website
sfc-power.com

H₂ Energy solutions

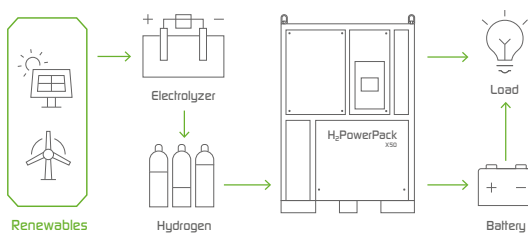
H₂GenSet

The mobile emission-free generator

The H₂GenSet is a flexible and mobile power generator with EFOY Hydrogen Fuel Cells. It is particularly suitable for areas that are not connected to the power grid, such as military camps, military operations or as a mobile emergency power supply in the event of major emergencies. A special feature is that it can be configured as a mobile back-up power system without the need for foundations or a building permit. With a peak power of up to 28 kW, the H₂GenSet can be used in many different applications and produces no emissions. The H₂GenSet can be refueled at hydrogen filling stations.*



Application



You can find an overview of all energy solutions on our website at sfc-defense.com

* not military hardened



EFOY H₂PowerPack

The hydrogen fuel cell integrated in the H₂PowerPack delivers an output of 50 kW and can be clustered up to 200 kW. With the standard CEE plug, the 300 bar hydrogen interface and the integrated display, the H₂PowerPack is easy to operate and can be used plug & play. By using a small high-performance buffer battery, the entire system is also comparatively small, light and compact and therefore easy to handle. The H₂PowerPack is therefore the ideal emission-free energy solution for off-grid and on-grid backup applications up to 200 kW.

EFOY H₂Rack

The EFOY H₂Rack is a hydrogen-powered, scalable energy solution for use inside existing shelters or containers that require a reliable emergency power supply up to 60 kW. It offers a flexible and powerful solution for back-up power applications that use hydrogen as a clean and efficient energy carrier.

Technical data

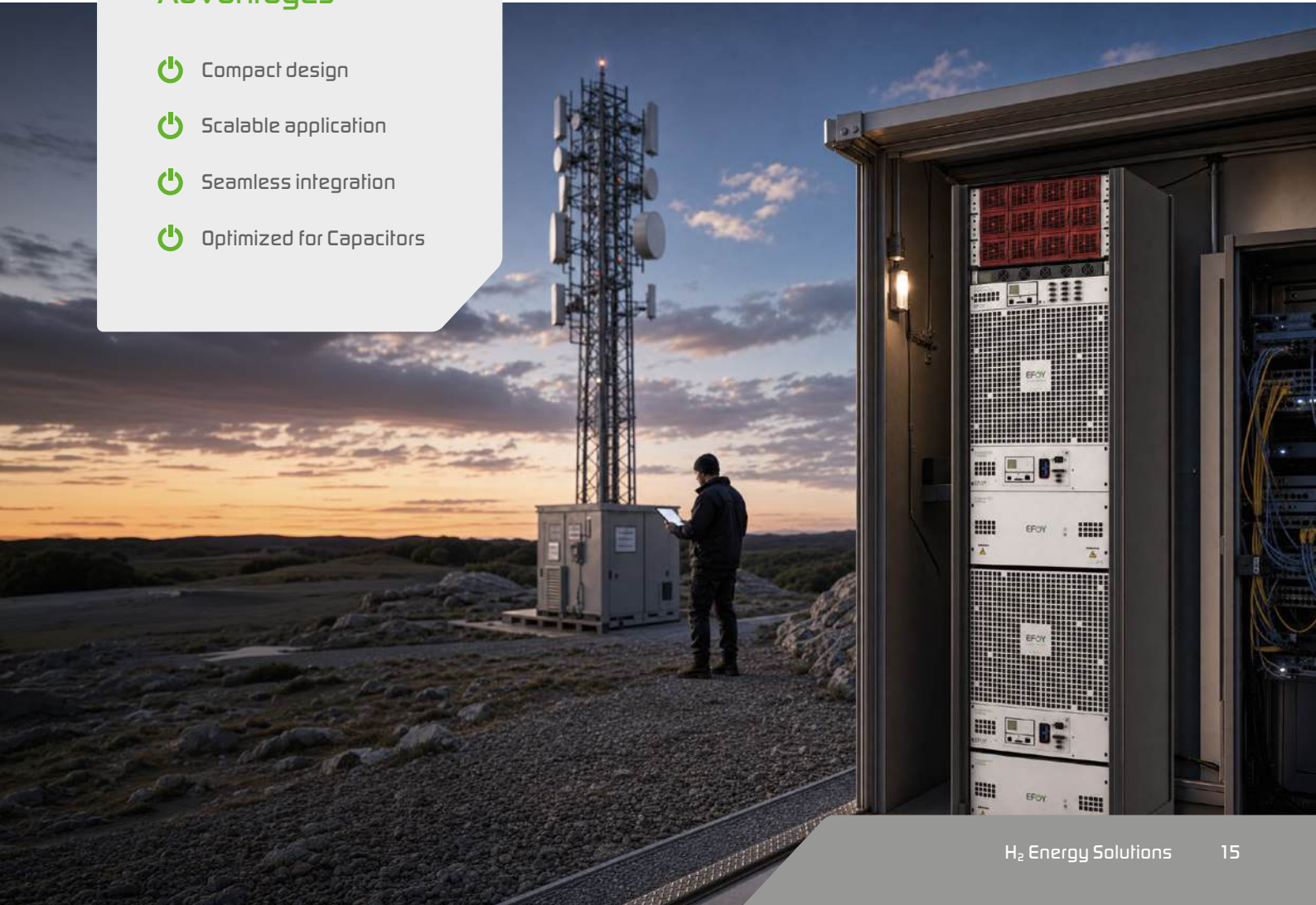
Fuel Cells	EFOY Hydrogen 5.0
Output power	9.0 kW DC / 8.2 kW AC
Control unit	EFOY Hydrogen 5.0 Controller
Input voltage	230 VAC
Nominal system voltage	48 VDC
Dimensions L x B x H	476 x 206 x 286 mm



Detailed technical data can be found on our website at <https://www.efoy-pro.com/en/efoy-h2-rack>

Advantages

- ⚡ Compact design
- ⚡ Scalable application
- ⚡ Seamless integration
- ⚡ Optimized for Capacitors



Energy Solutions for Arctic conditions

EFOY ProShelter

Long-term autonomous power station for critical remote applications

The EFOY ProShelter hybrid systems are designed for an autonomy of approx. 12-18 months and are therefore ideal for long-term autonomous use. The robust, specially developed EFOY ProShelter contains EFOY Pro Fuel Cells in a 15 cm thick insulated container including fuel cartridges, battery storage, solar charge controller, power distribution panel and sufficient space for the integration of customer equipment in the interior. Performance is guaranteed even at temperatures as low as -40°C .



Advantages



Up to 2.5 kW fuel cell power



Extended autonomous operation



Hybridized with solar & wind

Technical data

Dimensions (D x W x H)	6705 x 2440 x 2440mm 22' x 8' x 8'
Weight (Empty/Full Est)	Approx. 8,618 kg / 19,000 kg
Housing	Glass-reinforced polyester building
Housing color	White – customizable upon request
IP-protection category	Nema 4 Weatherproof



Find more informations
on our website
sfc-energy.ca

Energy Solutions for Border Security



Advantages



Digital zoom up to 500m



Connectivity 4G/5G/WiFi



More than 600 units active

Reliable, off-grid power supplies for AI surveillance systems

Long-term autonomous power
station for critical remote applications

Coastlines don't stop at the grid. Neither do threats. SFC Energy and Oneberry Technologies combine proven EFOY fuel cell power with AI-driven surveillance technology — enabling fully autonomous, off-grid monitoring solutions for coast guard operations, border security, and critical maritime infrastructure. For over 15 years and across more than 5,000 deployments in Singapore and Southeast Asia, Oneberry's surveillance systems have run on EFOY fuel cells — reliable, silent, and maintenance-free. No generator noise. No grid dependency. No blind spots. The result: live feeds to command centers within hours of deployment, continuous operation for weeks, and resilience in any weather condition.



Energy solutions from SFC Energy in use worldwide

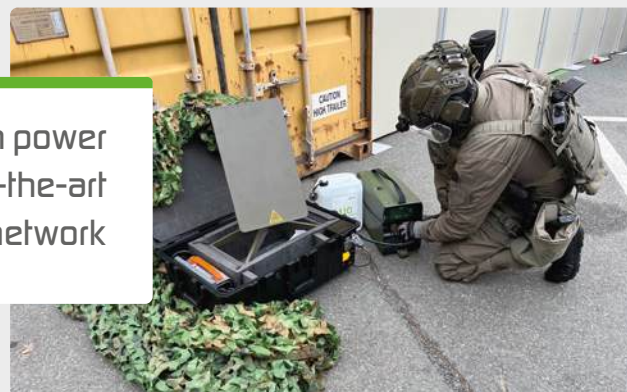
Lightweight and efficient
power supply for C4I



Continuous, unobtrusive
power supply for remote
sensing



Permanent long-term power
supply for a state-of-the-art
satellite network



Energy container for self-sufficient &
hybrid emergency power supply in civil
protection and disaster management



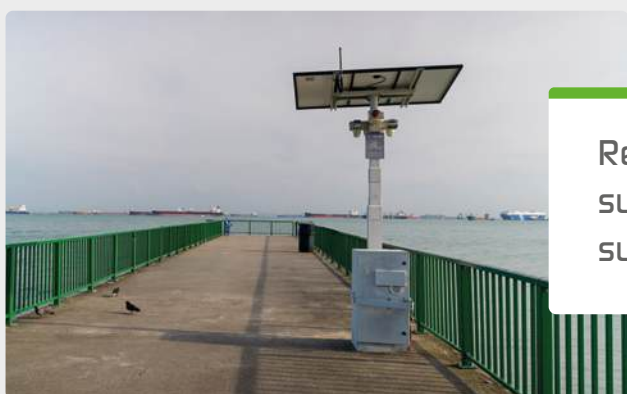
Find more references on our website
sfc-defense.com

Work in all climate zones

Mobile and off-grid power
supply high temperature
and climate zones



Reliable, off-grid power
supply for coast guard
surveillance systems



Self-sufficient power supply
for Arctic conditions



Sustainable energy supply
in extreme conditions like
in the Himalayas



Worldwide logistics and service

Almelo, NL
Brunnthal, DE
Calgary, CA
Cluj, RO
Gurgaon, IN
Hobro, DK
Orem, US
Swindon, UK

- SFC Distribution partner
- SFC Locations



SFC Energy

SFC Energy AG is an international technology leader, providing reliable hybrid energy systems for public security, defense, industry, and critical infrastructure.

Based on its world leading fuel cell technology, the company develops and manufactures cutting-edge hybrid power systems for off-grid stationary and mobile applications. SFC Energy's reliable, cost-efficient and sustainable platforms meet the rapidly growing global demand for resilient, decentralized energy supply in military operations, public security and surveillance as well as industrial

applications. The company also supplies high-precision, energy-saving power management solutions to high-tech companies in the semiconductor equipment, defense, and life science industries.

Headquartered in Brunnthal near Munich, Germany, SFC Energy has subsidiaries in Canada, Denmark, India, the Netherlands, Romania, the United Kingdom, and the United States of America. With a team of 500 dedicated employees, SFC Energy provides daily support to customers across the globe.

We look forward to your contact

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