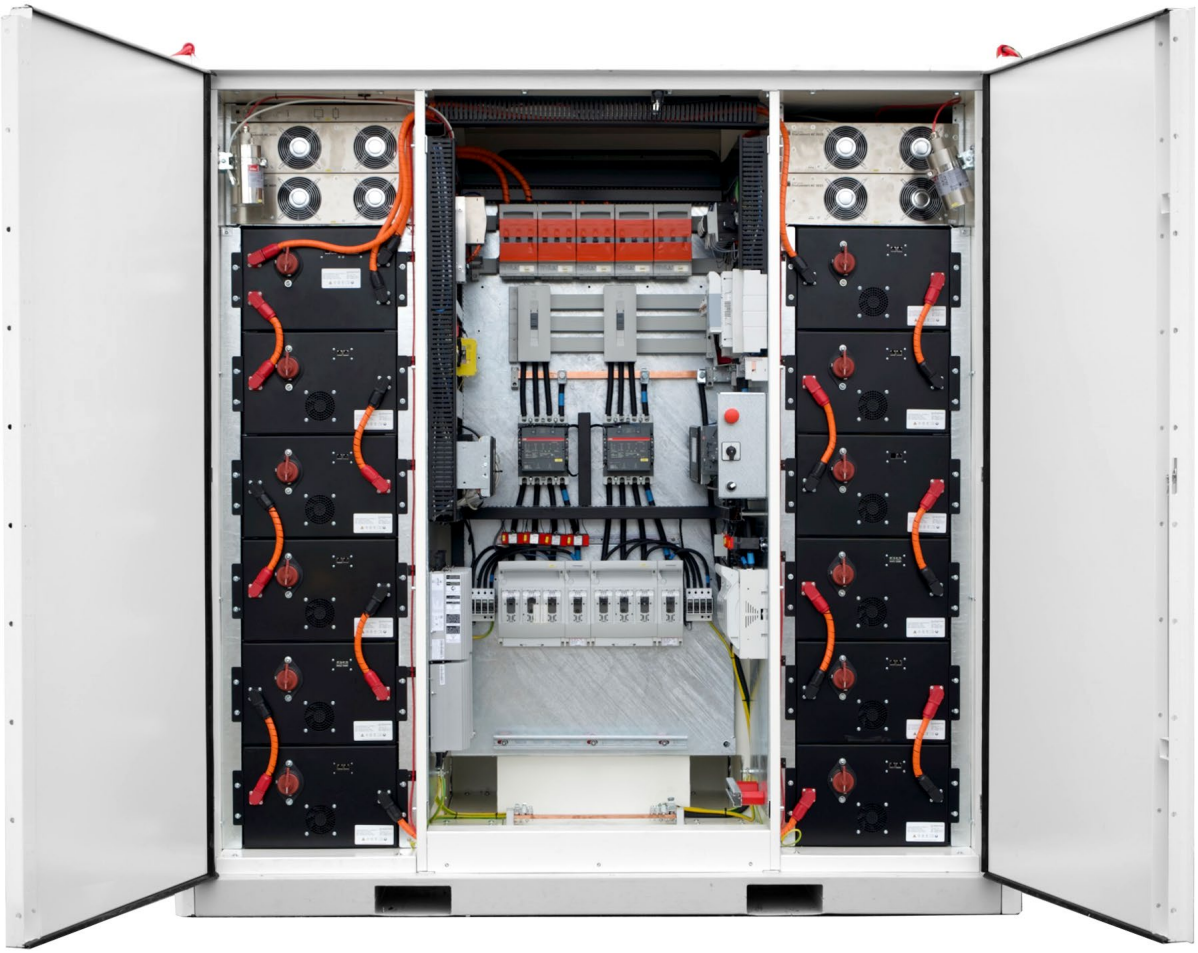
Off-Grid Europe

Ohms Box.

The BESS(t) platform for all your on- and off-grid applications.

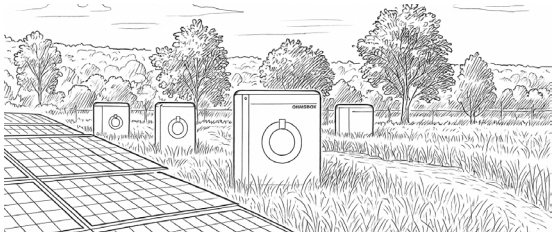
All-in-One BESS solution
Capacity of 211 kWh scalable to MWh
Built in ATS and PCS
Surge capacity: Up to 300%
Made in Germany



June 2025

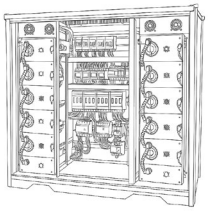
Ohms Box. All-in-One.

Reliable. Ready. Built to Last.
From off-grid projects to hybrid installations, the Ohms Box delivers unmatched flexibility, performance, and cost-efficiency. Designed for the world's toughest environments, it provides smart, self-contained energy wherever it's needed most.



High Performance & Reliability

With <10 ms response time, 98% efficiency, and 300% surge capacity, the Ohms Box delivers stable power in the most demanding conditions. Designed for black starts and sustained overloads, it performs when others fail —keeping systems running no matter the load.

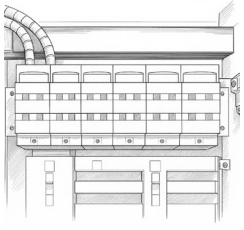


Pre-Configured & Pre-Assembled

Save time and costs with a plug-and-play setup. Each Ohms Box arrives fully equipped with batteries, inverters, HVAC, ATS, PLC, and industrial-grade communication—ready to connect, operate, and integrate in minutes, not days.

Built for Harsh Environments

Designed for extreme heat, dust, and humidity, the Ohms Box performs reliably in tough conditions. With rugged construction and field-proven durability, it's ideal for deployment in Africa where resilience, due to a high-stress environment, is critical.

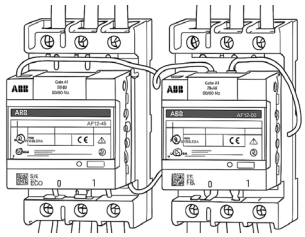


Seamless Integration PV / Grid / Genset

AC- or DC-coupled, the Ohms Box integrates with solar, grid, and gensets—operating alone or in parallel. Flexible and modular, it fits any hybrid setup and supports smart energy distribution with minimal setup time and no additional integration hardware.

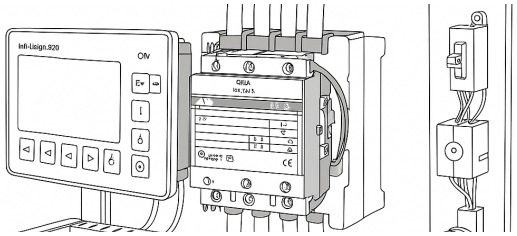
Ohms Box. Functional.

Powerful. Adaptive. Built like a tank.
With built-in ATS and smart auto-switching, the Ohms Box seamlessly manages generator and grid inputs. Its rugged air-conditioning system ensures reliable performance in extreme conditions, while the optional DC/DC PV converter enables direct solar integration—making it a true plug-and-play powerhouse for any off-grid or hybrid setup.



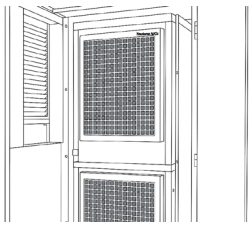
Smart Auto-Switching & Built-In ATS

The Ohms box automatically switches between grid, solar, or generator in under 10 milliseconds. This fast, intelligent switching ensures uninterrupted power, reduces fuel consumption, and maximizes uptime—delivering seamless energy flow without manual input, even during outages or transitions between power sources.



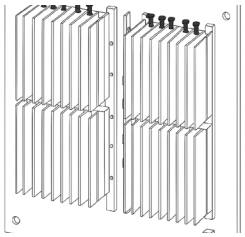
Integrated Genset Control

The Ohms box includes onboard generator control, automating start/stop sequences, optimizing fuel usage, and extending genset lifespan. No external controller is required—just plug in and go. It simplifies hybrid systems while ensuring reliable, efficient generator operation in off-grid, backup, or peak-load scenarios.



Hardcore HVAC System

The Ohms box is equipped with an industrial-grade HVAC system designed for extreme heat, dust, and humidity. It ensures stable internal temperatures, protects sensitive electronics, and requires minimal servicing—delivering long-term performance and system reliability in the world's harshest and most remote environments.



DC/DC PV Converter Option

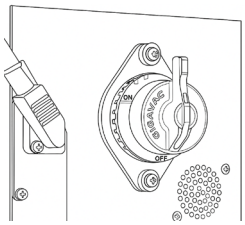
Connect solar directly to storage with the optional DC/DC converter. Operating at 99.5% efficiency and fanlessly cooled, it eliminates the need for external inverters. This low-maintenance solution is ideal for streamlined hybrid systems requiring quiet, efficient, and reliable direct DC integration.

Ohms Box.
Safe. Smart.

Engineered for Safety, Intelligence & Off-Grid Resilience
It combines advanced fire protection, individual high-voltage battery isolators for safe service, and an Off-Grid Controller for autonomous operation. With integrated LLM intelligence, it enables smart diagnostics and optimized energy management—built for safety and resilience, anywhere.

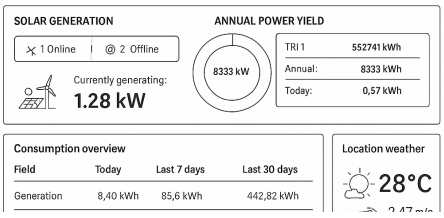
Integrated Fire Safety

A built-in FirePro aerosol suppression unit activates instantly during thermal events. This self-contained system protects critical components and minimizes fire-related damage and downtime. With no need for external cylinders or plumbing, it delivers compact, compliant fire safety in even the most remote installations.



High-Volt Battery Isolator

Each 76.8 VDC battery module includes its own isolator, enabling safe handling, installation, and maintenance. There's no need to shut down the full system—technicians can isolate and service individual packs, improving uptime, increasing safety, and simplifying field work on high-voltage energy systems.



Off-Grid Controller

The Ohms Box comes with a built-in controller that monitors, automates, and optimizes power flow. With real-time data, visualization tools, and remote access, it reduces operational costs, improves efficiency, and extends system lifespan—making complex energy control simple and intuitive.

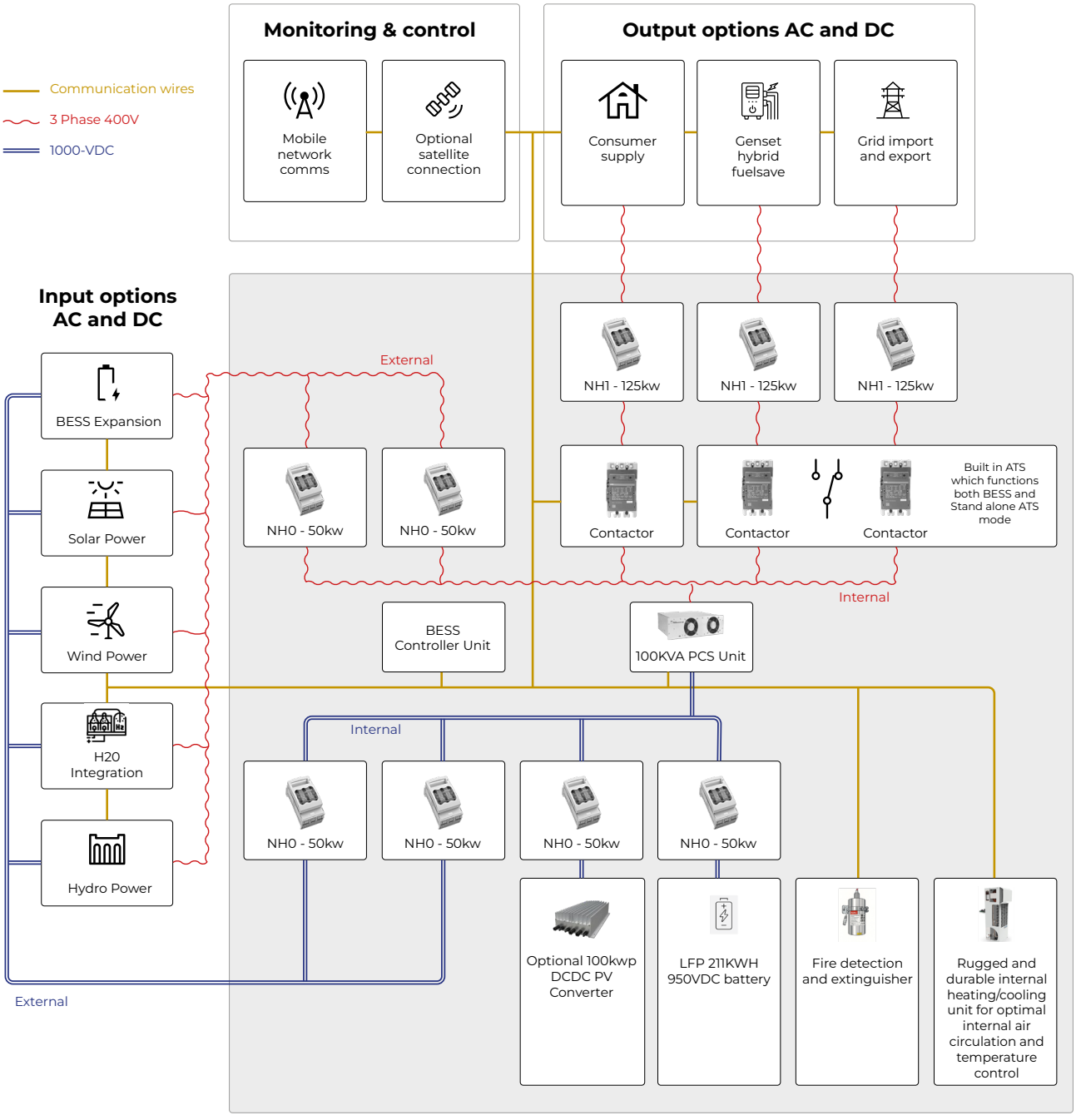
LLM Enabled AI Integration

The Ohms Box is the first BESS to integrate Large Language Model (LLM) technology. Interact with your system using plain language—ask for diagnostics, request reports, or troubleshoot in real time. Onsite or remote, intelligent control and insight are just a question away.

Ohms Box. Topology.

Whether you‘re powering remote installations, micro-grids, or mission-critical infrastructure, the Ohms Box provides everything required for quick, efficient deployment. All components are housed within the unit—no external components needed.

Component list includes Contactors, NH0/1 fuses, controller, AC and DC main bus, Heating and Cooling, Fire-extinguisher, world leading PCS and much more.



Datasheet.

On demand features	
PV Integration	PV can be connected via AC or DC input, simplifying system design and reducing costs for the end user.
Grid Integration, with NH1 fuse and Automatic Contactor	Grid can be connected via built in NH1 Fuse and Contactor, enabling both grid-connected and off-grid modes while supporting advanced grid services.
GenSet Integration, with NH1 fuse and Automatic Contactor	One or more gensets can be integrated directly in the cabinet via built in NH1 Fuse and Contactor as backup or to enable smart fuel-saving strategies in hybrid systems.
Automatic Transfer Switch backup option in case of BESS failure	Automatically switches the power source for connected loads between the grid, BESS, and GenSet, ensuring an uninterrupted power supply.
Micro-grid Controller	Built-in micro-grid controller manages PV, BESS, grid, and genset operations, ensuring reliable, optimized, and fully automated system performance.

BESS Electrical Specification	
Overload capacity 125 % (10 min)	125 kVA
Overload capacity 150% (1 min)	150 kVA
Overload capacity 300% (0.5 s)	300 kVA
Cell Chemistry (LFP)	Lithium Iron Phosphate
BESS Nominal Capacity	211 kWh
Cell Capacity	250 Ah
BESS Configuration	1P24Sx11S
Expected cycles	<6000

General Parameters	
Ohms Box Size	2155*1440*2185mm
Space Requirements	2.3*4.5 m
External Temperature Range	-20 C° to + 55 C°
Operating Temperature	10 °C to 30 °C
Relative Humidity	Max 95%
Cooling System	HVAC unit (R134a)
Noise Level	<75 dB(A) at 1 m
Enclosure Material	Mild steel powder coated
Color	White
IP Rating	IP 55-level design
Weight	3500 kg
Handling Options	Highload Forklift/Crane
Modular System Expansion	Supported via parallel operation

PCS (Trumpf TruConvert AC 3025)	
Charge/ Discharge Nominal Apparent Power	100 kVA
Operational Frequency Range	45 - 65 Hz
Maximum Efficiency	98 %
Reaction Time	<10 ms
AC Output Voltage Range	380/480 V ± 10%
Maximum Permissible AC Voltage	528 V
Nominal Operational AC Frequency	50/60 Hz
Asymmetrical load	< 33,2 kVA/phase

GenSet Connection	
Number	3 phases (3 phases plus neutral)
Gen. power maximum	200 kW
Usable Gen. power	100 kW
Fuses	NH1 Fuse up to 250 A

DC Coupled PV Plant Connection	
Number	Up to 4 connections
Maximum total nominal DC power	200 kW
Fuses	NH00 max 160 A

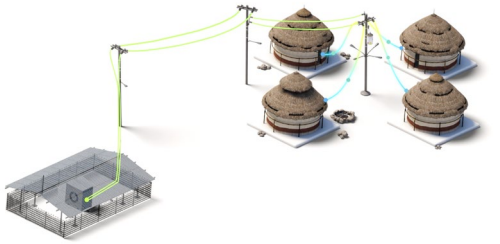
AC Coupled PV Plant Connection	
Number	up to 3 connections
Maximum total nominal AC power	170 kW
Fuses	NH00 max 160 A

Load Connection	
Rated voltage	230 V Line to Neutral (single phase) 400 V Line to Line (3 phase)
AC voltage range	200 V - 275 V Single phase / Line to Neutral 340 V - 480 V 3 phase/ Line to Line
Rated frequency / frequency range	50 Hz with 60 Hz optional, ± 5 Hz frequency range
Number	3 phases (3 phases plus neutral)
Rated power	100 kW
AC current at rated values	3x 145 A
Fuses	NH1 Fuse max 250A

Monitoring / Communication	
Communication Protocol	Modbus via RS485/Ethernet
Remote Control System	Off-Grid Controller

Ohms Box. Applications.

Mini-Grids and fleet management.
The Off-Grid Europe Mini-Grids are stand-alone systems that provide electricity to rural or isolated areas where the main grid is either unavailable or unreliable.



Industrial backup power.
Where the grid is unreliable and you require a 100% uptime for your electrical appliances, the Ohms Box will ensure that you never feel the blackout. The Ohms Box will optimise your diesel burn and grid consumption and maximise your PV penetration in real time, every day wherever you are.

Commercial & Industry

Grid Stabilisation & Extension

Rural Electrification

Empowering Communities Through Technology
The Ohms Box is the perfect energy solution for off-grid, stand-alone, all-in-one and hybrid power setups, designed to provide reliable, scalable energy in diverse environments. With a nominal capacity of 211 kWh and flexible output options of 50 kVA and 100 kVA, the Ohms Box is adaptable for applications ranging from kilowatt to megawatt scale, delivering cost savings and rapid installation.

Unlock the Potential of Renewable Energy and Knowledge
Let‘s make the future of off-grid living smarter, more connected, and sustainable.

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