xelectrix

Company, Product & Applications 2023

ENERGY. ANYTIME. ANYWHERE.



COMPANY

HISTORY / VISION / UNIQUENESS / COMPONENTS



COMPANY / APPLICATIONS/ PRODUCTS/ REFERENCE PROJECTS



XELECTRIX POWER THE COMPANY

- 2016 Launch of xelectrix Power GmbH by the brothers Alexander and Dominik Hartl
- IDEA Environmental protection through hybridization of diesel generators
- 2018 Cousin Christian Deutschbauer joins the company
- 2020 Lansdowne Investment and Tansanit became part of the company
 > BASIS FOR OUR GLOBAL GROWTH PLANS
- 2021 Martin Lehner Top-Manager and pioneer in the field of electrification of construction machinery joins as investor & strategic advisor
- 2022 With MD Dr.-Ing Kai P. Steinfeld and his international experience from StartUp to ScaleUp





xelectrix Systems in the Field:

- ≻ 9250 kW
- ≻ 16700 kWh
- ➤ 132 Storage-Systems
- Austria, Germany, Switzerland, Czech Republic, Romania, Ukraine, Finnland, Sweden, Spain, Indonesia, UAE

As of Okt 2023

ENERGY. ANYTIME. ANYWHERE.



VISION STORAGE SOLUTION

Under the motto **ENERGY. ANYTIME. ANYWHERE.** xelectrix Power brings new innovations and concepts to both On- and Off-Grid applications.

These include in-house developed Inverter, battery packs, Network Analysis Module, Battery and Energy Management System concepts that enable us to reach a wide range of customers in order to address one of the most pressing issues of our time:

ENVIRONMENTAL PROTECTION







Leading the Energy Transition to play a major part in global climate sustainability.

ENERGY. ANYTIME. ANYWHERE.

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POWER BOX TECHNOLOGY

UNIQUE POWER ELECTRONICS

- Bi-directional with full power (from 11 kW to 150 kW)
- 3-phase, 100 % unbalanced load acceptance
- Highest through put in the industry with up to 950 A (AC1)
- Operation Modes:
 - Grid-connected System
 - Island-System / Backup
 - In combination with a diesel generator
- Multi-functional: RE Optimization, Voltage Regulation, Peak Shaving, ...





We are a Technology Provider and a High Quality Manufacturer.

- \succ Only one power unit
- ➢ Low component cost
- > Unique inverter architecture

Net-Certifications of our systems:

- > Austria: TOR Erzeuger Typ A:2019-12
- > Germany: VDE-AR-N 4105:2018-11
- Switzerland: VSE NA/EEA-NE7–CH 2020 A2
- > European Standard: EN 50549-1:2019



POWER BOX TECHNOLOGY

UNIQUE STORAGE TECHNOLOGY



- Intrinsically safe LiFePO₄ Cells (LFP)
- Modular Battery Capacity expandable in 23,5 kWh battery packs
- xelectrix Power Battery Management System for long cell life and highest efficiency
- Integrated thermally triggered extinguishing system
- Innovative DC Connection Technology





We are a Technology Provider and a High Quality Manufacturer.

- Flexible & modular
- ≻ Safe
- Expandable
- Energy Storage System (ESS)



POWER BOX TECHNOLOGY

UNIQUE NAM (NET-ANALYSIS-MODULE)

In-house development

- Precise and quick measurement
- Grid Connection Codes
- Extremely short response time
- Suitable for balancing energy applications (FFR)





Compatible across all XPB units

xelectrix

One central measurement / analysis module



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UNIQUE SAFETY FROM CELL TO UNIT

- Protects lives
- Protects property
- Able to be used in harsh environments
- Able to be used in confined spaces
- Safety in transportation





Safety starting from CELL level, to MODULE level, to UNIT level



POWER BOX COMPONENTS

INVERTER	TRANSFORMER	SWITCH FUNCTION	NAM (Net Analysis Module)	BATTERIES AND BMS
Converting AC to DC and visa versa. Acts as the interface between batteries and consumer. XPB has a bi-directional inverter eliminating extra inverters and rectifiers.	The transformer is the static device which works on the principle of electromagnetic induction. It is used for transferring the electrical power from one circuit to another without any variation in their frequency.	Ability to disconnect from the Grid when the XPB is utilized as an Island supply to the consumers.	Measuring points that allows the XPB to react through its on-board energy measurement system providing optimum supply and battery charging functionality.	In-house developed battery architecture and unique xelectrix Power active battery management system.

No Transformer and Switch Function

= No Backup Power / Grid Forming Ability





PLUG AND PLAY COST SAVING

CO

APPLICATIONS

OFF-GRID / ON-GRID



COMPANY / APPLICATIONS / PRODUCTS / REFERENCE PROJECTS



ON- & OFF-GRID SOLUTIONS FOR

- Construction Sites, Mining CONSTRUCTION SITE OF THE FUTURE
- 2 Disaster Management PARTNERSHIP TRUST
 - In Front of the Meter Grid Operation ENERGY TRANSITION TOGETHER
- 4 Behind the Meter Residential, Agricultural, Commercial, Industry ENERGY OPTIMIZATION STORAGE CONTROL
- 5 E-Mobility THE SOLUTION BEHIND THE CHARGER
 - LEC / Microgrids

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POWER BOX APPLICATIONS

OFF-GRID SOLUTIONS



DIESEL GENERATOR HYBRIDIZATION

Stabilize load curves, control the DG to reduce fuel burn and emissions.

PEAK POWER BOOST

Supplement power from the on-board inverter to meet high load peaks utilizing battery power.

GENSET CONTROL

Communicate with a generator and automatically switch it on / off at pre-programmed loads.

RENEWABLE ENERGY OPTIMIZATION

Be connected without infrastructure changes to wind / and or solar sources.

CHARGING SOLUTIONS

Act as an Island Style solution for EV and construction equipment charging requirements.

MICROGRID

IN AUSTRIA

Supply grid independent energy supply, especially for areas that are not in conventional grid coverage.

LOCAL ENERGY COMMUNITY – LEC

Facilitate independent energy storage and supply on a community level, combining RE Prosumers (PV, Waterpower).

POWER BOX APPLICATIONS

ON-GRID SOLUTIONS







PEAK SHAVING

Reduce energy costs by using on-board inverter power to reduce consumer kW power peaks.

PEAK POWER BOOST

Supplement power from the on-board inverter to meet high load peaks utilizing battery power.

GRID STABILIZATION

Apply innovative voltage frequency regulation using pre-set target parameters that are then monitored.

LOAD SHIFTING

Store and discharge power at selected times allowing the shifting of power away from higher tariff periods.

CHARGE SHIFTING

Pre-programmed to charge at specific times and specific source – Grid / Genset / PV / Wind.

ENERGY TRADING

Store and discharge electricity at specific times allowing traders benefit from variable market conditions.

GRID CONNECTION OPTIMIZATION

Lower GC costs by allowing a building / consumer site to move into a lower power bracket.

ELIMINATION OF SLEEPING BACKUP

Be used as On- / Off-Grid backup provider. Often replacing conventional generator systems.

BACKUP

On-board transformer and switch function

ISLAND STYLE CHARGING SOLUTIONS

ZERO FEED-IN

Zero feed-in using overlaying EMS or Smart Meters



PRODUCTS

USP / XPLAINED / BENEFITS



COMPANY/ APPLICATIONS/ PRODUCTS / REFERNECE PROJECTS

XELECTRIX POWER PRODUCTS

PRODUCTS 2023-2

Naming

e.g. XPB-U150-240-M10

XPB = xelectrix Power Box

B = BASIC SPLIT Range

 \mathbf{P} = PRO Range

U = UNLIMITED Range

1st VALUE = Inverter Power in kW **2nd VALUE** = Battery Capacity in kWh **M** = U: Container Sizes in feet



XELECTRIX PRODUCT RANGE 2023-2

BASIC SPLIT ECO

	B11-ECO	B35-ECO
Power	11 kW	35 kW
Gross Storage Capacity	47 kWh	47-188 kWh
AC Connection	63 A	115 A (AC3) / 125 A (AC1)



UNLIMITED

(with Backup Function, Container Placement)

	U35-M10	U80-M10	U150-M10	U150-M20
Power	35 kW	80 kW	150 kW	150 kW
Gross Storage Capacity	141-188 kWh	141-282 kWh	188-282 kWh	470-564 kWh
AC Connection	630 A (AC3) / 800 A (AC1)		800 A 950 A	(AC3) / .(AC1)



BASIC SPLIT HA

(with Backl	ip Function, Inc	loor)
	B35-HA	B80-HA
Power	35 kW	80 kW
Gross Storage Capacity	94-188 kWh	94-282 kWh
AC Connection	630 A (AC3) / 800 A (AC1)	





PRO 2.1

Power: 25 / 50	kW
Gross Storage	Capacity: 60 / 100 kWh
Plug & Play	
Mobile Power	



COMING SOON

Now with Leasing Financing 🗮 WURTH LEASING

POWER BOX

USP'S POWER BOX



SAFETY

Self-securing LFP cells Integrated extinguishing system in each battery pack (non-flammable) Emergency Power System Backup Power / formation of an emergency power system during blackouts Continued operation and control of PV systems during blackouts

ENVIRONMENTAL SUSTAINABILITY

Hybridization of diesel generators / Increasing efficiency with less diesel burn Peak Power Boost / E.g. using smaller diesel gensets Increase of RE Self Consumption CO_2 Reduction

COST SAVING

High voltage LiFePO4 battery pack with screwed cells (650 V nominal voltage) xelectrix Power active Battery Management System (aBMS) High number of charging cycles depending on the application Maintenance costs / fossil fuel costs / logistic costs / grid connection costs Performance of battery packs: 70 % capacity after 10 years

SYSTEM CONCEPT

3-phase AC coupled storage system Parallel Platform Technology / Peak Power Boost (power addition with other energy sources) 100 % unbalanced load acceptance Plug & Play / connection preparation for uncomplicated installation

MODULAR, ROBUST, EXPANDABLE

Storage capacity from 47 kWh up to 564 kWh Inverter power from 11 kW to 150 kW per unit

MULTI-FUNCTIONALITY

Grid parallel (on-grid) or as independent island system (off-grid) Off-grid application / Diesel Hybridization, Peak Power Boost In front of the Meter Application / e.g. voltage control, frequency regulation Behind the Meter Application / e.g. Peak Shaving, RE Optimization, Reactive Power Compensation

POWER BOX PLUG & PLAY



COST SAVING

PLUG AND PLAY

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XPLAINED REAL SOLUTIONS FOR YOUR APPLICATION

Construction Hybridization CONSTRUCTION SITE OF THE FUTURE

EV Peak Power Boost E-MOBILITY



CONSTRUCTION SITE OF THE FUTURE

Ability to use smaller DG´s or to add equipment with higher power requirements

DISCOVER NEW ENERGY **PEAK POWER BOOST** xplained: Charging from EV's - Example

DISCOVER NEW ENERGY



Ability to utilize power-limited grid connections to meet additional requirements POWER BOX APPLICATIONS

XPLAINED REAL SOLUTIONS FOR YOUR APPLICATION

PV during Grid Outages RE OPTIMIZATION & BACKUP POWER

4 Hydro Energy Optimization ENERGY OPTIMIZATION STORAGE CONTROL



Ability to keep PV systems running during blackouts as well as regulate PV production

Ability to blackstart power plants after a grid shutdown, including forming XPB-grid and resync with the grid

POWER BOX ADVANTAGES

BENEFITS

Safety

- Environmental sustainability
- Cost savings
- Plug & Play
- Modular, robust and expandable
- Multi-functional
- Working with a company passionate in leading the Energy Transition









PLUG AND PLAY COST SAVING

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SELECTION, CONTROL AND MONITORING

xPSel xPCon xPMon



COMPANY/ APPLICATIONS/ PRODUCTS / REFERNECE PROJECTS

XELECTRIX POWER XPSEL

XPSEL SELECTION AND SALES TOOL

- EV Charging infrastructure planningEV Charging load curve generation
- Generic, Scalable Load Curves
- Real Load and Yield Curves usage
- Global Solar Yield Calculation
- Comparison and selection of optimal XPB units under different scenarios
- Recommended unit and application configuration
- Simulation Results: CO₂, LCOE, ROI, Costs/Cash Flow, Battery Cycle analysis

Business Model Optimization using Smart Simulation and Analyses



XELECTRIX POWER DISPLAY

XPCON ON-BOARD DISPLAY & CONFIGURATION

ISLAND MODE

Black Start

Island Mode Power Supply

ON-GRID MODE

Charge from the Grid

Peak Power Boost

Peak Shaving

- ▶ RE Self Consumption Optimization
- Back up

DIESEL GENERATOR HYBRIDIZATION

DG Sync

- DG Remote Control
- Auto Peak Power Boost
- Force Hybrid

ISLAND MODE OPERATION

The Island Mode on the xelectrix Power Box provides energy when there is no Grid or Diesel Generator available. It also supports other features like smooth start and power bank mode.

ON-GRID MODE

On-Grid Mode on the xelectrix Power Box gives users full flexibility to implement different grid-tied applications, working in Hybrid Mode to provide numerous functions.

DG HYBRIDIZATION MODE

Offers users the ability to optimize the diesel generator load factor which results in the maximum reduction of fuel consumption, CO_2 emissions, noise pollution, and diesel generator downsizing.







XELECTRIX POWER MONITORING

XPMON MONITORING

GET ONLINE ACCESS TO YOUR POWER BOX

Register

 Login through Mobile Phone, Tablet or Computer

MONITORING AND CONTROL

- Observe the state and functions of your XPB at any time.
- Change the settings
- Activate Backup
- Real-time and historic data review.







SELECTED REFERENCE PROJECTS

PLUG & PLAY / OFF-GRID / ON-GRID / SOLUTIONS / BENEFITS





TRANSPORT MAINTENANCE OF RAILS

APPLICATION

Maintenance work for rails – welding and grinding Diesel Generator (DG) replacement Inner city noise & emission reduction

Charging with PV

SOLUTION

XPB-B35-80-ECO 35 kW Power 80 kWh useable Battery Capacity

WHY XELECTRIX?Strongly fluctuating loads35 kW Power Box replaces 85 kVA DG



CONSTRUCTION

AMG MIETE GMBH

APPLICATION

Supply of all construction site consumers (tower cranes etc.)

High peak loads with a small grid connection or replacement of diesel generator

SOLUTION

XPB-U80-240-M10 80 kW Power 240 kWh useable Battery Capacity

WHY XELECTRIX? Robust Peak Shaving Emergency Power System









MOBILESPACE

MOBILE POWER FOR GREEN EVENTS

APPLICATION

Mobile Power supply for film sets and Green Events. Mounted on the truck.

SOLUTION

Application-oriented solution 80 kW Power 160 kWh useable Battery Capacity

WHY XELECTRIX?

ATS – Automatic Transfer from grid charging to charging from the truck mounted generator

Mobile Energystorage-Solution

Island-System



FARMER M. DETZLHOFER BRANDMOA MILCH GMBH

APPLICATION

PV Self-Consumption Optimization Island Mode / Emergency Power System

SOLUTION

XPB-U500-480-M40 500 kW Power 480 kWh useable Battery Capacity

WHY XELECTRIX? Backup Power PV-Operation during blackouts Absolute self-sufficiency



FARMER K. JODLBAUER PIG FARM

APPLICATION

PV Self-Consumption Optimization Island Mode / Emergency Power System

SOLUTION

XPB-B80-160-HA 80 kW Power 160 kWh usable Battery Capacity

WHY XELECTRIX?

Modular System Emergency Power System PV-Operation during blackouts













FARMER CHRISTIAN REICHINGER

APPLICATION

PV Self-Consumption Optimization EV Charging Infrastructure

SOLUTION

XPB-U80-100-M10 80 kW Power 100 kWh useable Battery Capacity

WHY XELECTRIX? Peak Shaving Backup Power





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AGRICULTURE PETER KATZENHOFER

APPLICATION

PV Self-Consumption Optimization EV Charging Infrastructure

SOLUTION

XPB-U80-100-M10 80 kW Power 100 kWh useable Battery Capacity

WHY XELECTRIX?

Backup Power PV Operation during blackouts RE Optimization EV Charging Infrastructure





CHARGING SUN POWER ONLY EXPO 2020 DUBAI

APPLICATION

EV-Off-Grid-Charging with Solar Energy 100 % CO₂-free 100 % Self-Sufficiency

SOLUTION

Unlimited XPB-U80-200-M10 80 kW Power 200 kWh useable Battery Capacity

WHY XELECTRIX?

Plug & Play Connection of 2 PV systems Control of the entire system Suited for harsh environments





PROTON MOTOR SELF-SUFFICIENT FUEL CELL POWER PLANT

APPLICATION

240 kW Fuel Cell Power Plant Mobile hydrogen filling station 100 % CO₂-free

SOLUTION

HyShelter 240 Up to240 kW Power Up to 240 kWh useable Battery Capacity

WHY XELECTRIX?

Revolutionary complete system combining fuel cell and battery storage technologies Extremely fast response times





KA-TE PMO AG

HYBRID SYSTEM 2.0 FOR SEWER REHABILITATION

APPLICATION

Clean, efficient and quiet work Replacement of diesel aggregate Vehicle-mounted

SOLUTION

Customized System 11/35 kW Power 20/40 kWh useable Battery Capacity

WHY XELECTRIX?

Up to 12 hours emission-free work Stable island system Combination with diesel aggregate









SWEDISH PRO PREMIERE 30.9.21 TILLQUIST GROUP AB

APPLICATION Diesel Generator Hybridization

SOLUTION

PRO XPB-P35-10035 kW Power100 kWh useable Battery Capacity

WHY XELECTRIX?

Modular System Plug & Play Totally mobile





SOLAR PARK HERBERT GOTTHALMSEDER

APPLICATION Business Park Renewable Energy (PV) EV Charging

SOLUTION

XPB-U250-360-M40 Container 250 kW Power 360 kWh useable Battery Capacity

WHY XELECTRIX?

High Power Modularity and Expandability Backup Power













LINZ NETZ BESS IN PRENDT

APPLICATION

Grid stabilization (caused by PV load fluctuation) Research co-operation

SOLUTION

XPB-B80-140 System 80 kW Power 140 kWh useable Battery Capacity

WHY XELECTRIX?

Developer and Manufacturer Outdoor System Specific Power Electronics Control Software



POGUSCH WEINKOST/ALLMOBIL 21.06.19

APPLICATION Event / Shuttle Service Off-Grid EV Charging

SOLUTION

2 x XPB-B80TS-140 Rack Systems 160 kW Power 280 kWh useable Battery Capacity

WHY XELECTRIX?

High Power Mobile Storage Solution Island System Plug & Play





RESIDENTIAL / AGRICULTURAL

APPLICATION PV Self-Consumption Optimization

SOLUTION

XPB-W11-20 Wall System11 kW Power20 kWh useable Battery Capacity

WHY XELECTRIX? Backup Power PV Operation during blackouts RE Optimization





W.E.B. WINDENERGIE

APPLICATION Storage for Self-Consumption

SOLUTION Customized System 500 kWh useable Battery Capacity

WHY XELECTRIX? Developer and Manufacturer Flexible Design Safe and long-life batteries Good price / performance ratio





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VOLVO CE ELECTRIC LAUNCH PARIS

APPLICATION Off-Grid Charging

SOLUTION XPB-B80-140 80 kW Power 140 kWh useable Battery Capacity

WHY XELECTRIX? Transformer Island System Plug & Play





WE OPERATE ON A GLOBAL BASIS

With our Head Office in Mauthausen, Austria and more than 30 employees xelectrix Power has evolved to an international focused company specialized in **Energy, Optimization, Storage and Control**.







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