

ENERCLEVER UPS 30-160kW



"ENERCLEVER UPS embodies a cutting-edge concept that merges innovation with sustainability, combining strength and reliability. Designed to lead the future market, it fully embraces the global green revolution. With its eco-friendly philosophy, ENERCLEVER "concept" ensures continuous protection, focusing on hybrid applications with multiple sources, while maximizing energy efficiency



100% made in Italy

The Enerclever concept applies to all Powertronix UPS in the Alcor, Auriga, and Auriga HP lines.

The integration and flexibility of Enerclever enable the upgrade of these UPS systems through the addition of extra logic controller and flexible, multi-purpose accessories.

Enerclever allows for the reduction or even the elimination of grid power consumption, replacing it where possible with alternative and renewable energy sources. The use of Enerclever may also enable the battery to be used for energy storage and identifies the most economical energy source at any given moment.

TYPICAL APPLICATION:

- Offices & IT;
- Telecommunications;
- Servers/ Datacenter;
- Medical/ Hospitals;
- Broadcasting;
- Access & Presence

SPECIAL APPLICATION:

- Hybrid UPS
- Energy Manager
- CPSS

VFI-SS-111

3-1* / 3-3
* Up to ECU50

25kW-160kW

ECUPS

ECUPS model	ECU30	ECU50	ECU80	ECU100	ECU130	ECU160
ECUPS P.NOM	30kW	50kW	80kW	100kW	130kW	160kW

General:

ECUPS TOPOLOGY	VFI On-Line double conversion, with pure sine-wave output					
CONVERTER/INVERTER	PFC and INVERTER based on IGBT, high frequency, TRAFOLESS					
STATIC SWITCH	Electronic SCR type static switch + Contactors					
COOLING SYSTEM	Air Cooled with sturdy speed controlled centrifugal fans			Liquid cooled + forced air		

Input:

INPUT NOMINAL VOLTAGE	3P+N 380/400/415VAC					
INPUT VOLTAGE TOLERANCE	300+500VAC 100% load - Factory setting $\pm 20\%$ nominal voltage					
INPUT NOMINAL FREQUENCY	50/60Hz					
INPUT FREQUENCY TOLERANCE	40 \div 70 Hz					
INPUT POWER FACTOR	0.99					
MAX ABSORBED CURRENT	60 A	97,5A	162,5A	195A	260A	325A
INPUT THDI	THDI < 3%					

Output:

OUTPUT NOMINAL VOLTAGE	3P+N 380/400/415VAC					
OUTPUT POWER FACTOR	1					
OUTPUT THDV	< 2% with linear load & < 4% with non linear load					
OVERLOAD	<110% continuous load , <130% 10 minutes, <160% 5 Seconds					
OUTPUT NOMINAL FREQUENCY	50/60Hz $\pm 0.1\%$ stability					
SOFT START	Available , 30 Seconds (factory selectable)					

Bypass:

BYPASS NOMINAL V&F*	3P+N 380/400/415VAC - 50/60Hz					
BYPASS VOLTAGE TOLERANCE	$\pm 20\%$ - Factory setting $\pm 10\%$					
BYPASS ACCEPTED OVERLOAD	170% 30 min - 1000% 100ms					
MANUAL BYPASS	Available, with mechanical security					

Battery:

BATTERY COMPATIBILITY	VRLA-AGM / VRLA-GEL / NiCd / Lithium / Others					
BATTERY CHARGING I&V*	Factory setting 0.1C / 13,5VDC/block for VRLA adjustable for other solutions / according to B.M.S. for Lithium battery					
BATTERY CONFIGURATION	720VDC x string / EXTERNAL ONLY					

Environment:

DIMENSION	390x930x910(h)mm	410x830x1500(h)mm	800x830x1800(h)mm			
IP PROTECTION	IP20 - metal case - complete with castors others IP on request					
WEIGHT (W/O Battery)	94Kg	240Kg	290Kg	480Kg	540Kg	590Kg
TEMPERATURE & RH%	0 \div 40°C – RH% up to 95% non-condensing - 1.000m asl 1% derating every +100Mt up to 2000 asl					
EXT INTERFACE	Standard: LCD Touch Display RS-232/RS485 + dry contacts +LED Status Display Optional: SNMP via external card; Remote panel					

Others:

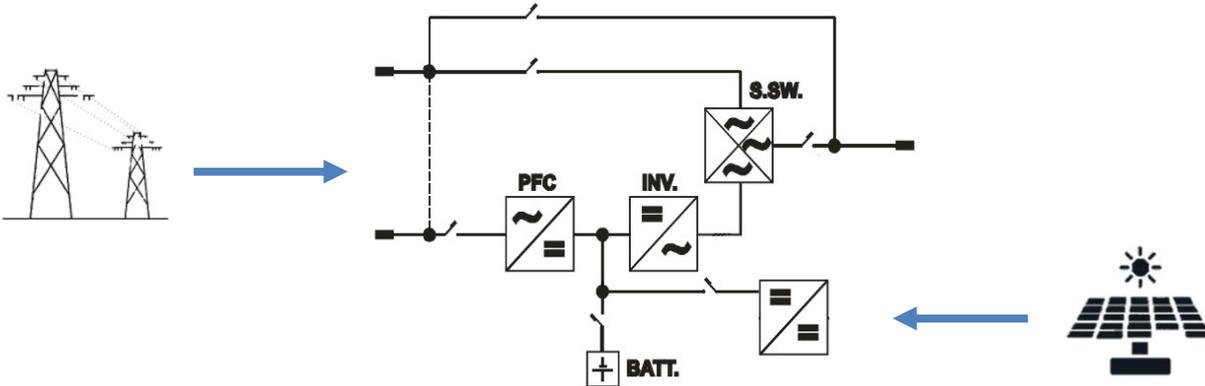
EUROPEAN DIRECTIVES	LV 2014/35/EU Low Voltage Directive EMC 2014/30/EU Electromagnetic Compatibility Directive / CE marks					
STANDARDS	Safety IEC EN 62040-1;IEC EN 62040-2 EMC;RoHS Compliance; IEC EN 62040-3 (Voltage and Frequency Independent)VFI-SS-111					

ENERCLEVER UPS

Working Mode “I”:

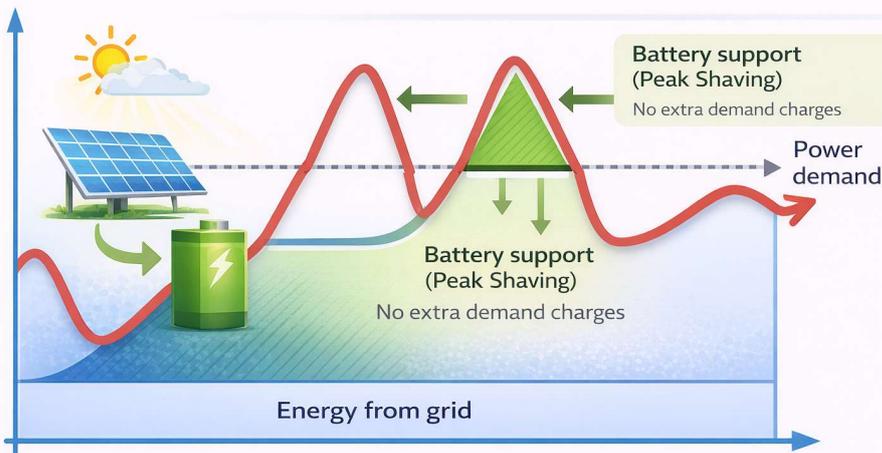
➤ + HYBRID UPS

The Enerclever UPS, configured as a Hybrid UPS, provides the option to connect its DC-BUS directly to a **photovoltaic (PV) system or an alternative DC energy source**. This capability is made possible by the exclusive Powertronix SBC Design. This configuration enables the UPS to achieve **maximum energy efficiency** by integrating the alternative energy source, whenever available, directly at the input of the UPS's output inverter. As a result, the **Enerclever UPS reduces the energy drawn from the grid in inverse proportion to the energy produced by the alternative source**, allowing the possibility to **completely eliminating grid consumption**.



➤ + HYBRID UPS FEATURES

ENERCLEVER UPS, configured as a Hybrid UPS, integrates advanced energy management functions designed to optimize energy availability, reduce operating costs, and improve infrastructure sustainability.



Peak Shaving: During peak power demand, the load is supported by energy stored in the battery, limiting grid consumption and avoiding additional costs related to exceeding contractual power limits.

Solar Integration: Thanks to the Powertronix Solar Battery Charger (SBC), photovoltaic (PV) energy can be directly connected to the inverter, continuously reducing grid power absorption.

Excess solar energy is used to charge the battery, maximizing on-site energy efficiency.

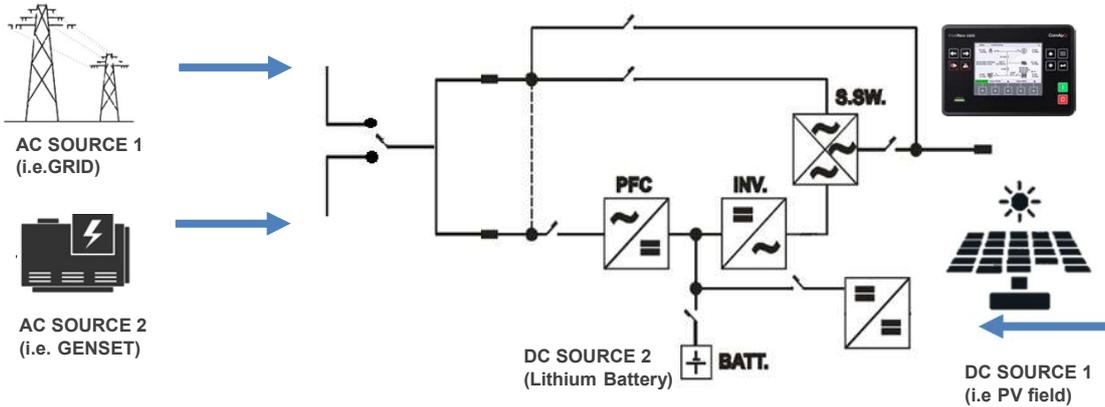
POWERTRONIX Secure Power Innovation That Saves

ENERCLEVER UPS

Working Mode “II”:

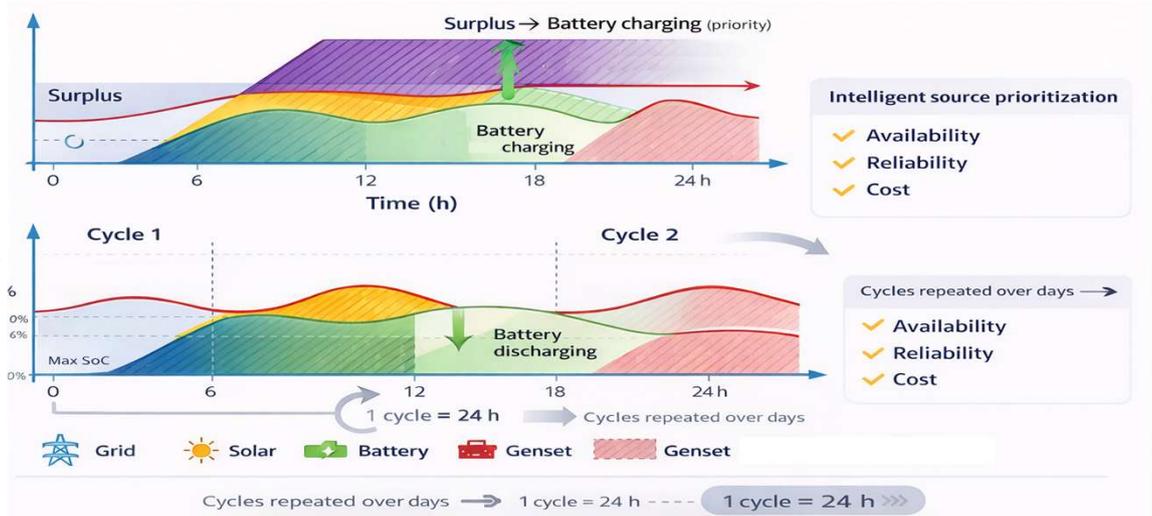
➤ + ENERCLEVER UPS

The **ENERCLEVER** concept, as part of a complete **ENERCLEVER UPS** solution, delivers intelligent on-site energy management by dynamically prioritizing available sources based on availability, reliability, and operating cost. The system performs seamless, no-break transfers while continuously regulating output power quality—ensuring **full power quality** compliance with IEC 62040-3—and guaranteeing uninterrupted supply to critical loads. Powertronix’s lithium battery can operate as a primary energy source, supporting both peak shaving and regular cycling with high efficiency and outstanding performance.



➤ + ENERCLEVER UPS FEATURES

ENERCLEVER UPS enables **intelligent, flexible, and fully automatic power management**, ensuring power quality and continuity of service while reducing operating costs and improving the sustainability of the infrastructure.



Thanks to programmable logic and customizable parameters, ENERCLEVER acts as an “**Active Power Manager**”, intelligently coordinating on-site energy sources—including seamless integration of Powertronix lithium batteries—to ensure **uninterrupted power supply and maximum efficiency**.

POWERTRONIX

Secure Power

Innovation That Saves

ENERCLEVER UPS

+ Lithium Battery

Powertronix has outlined **two advanced battery solutions** for its **Enerclever UPS systems**, each utilizing different **lithium-based chemistries** to provide optimal performance and flexibility.

The two configurations are as follows:

LiFePO4 (Lithium Iron Phosphate) based battery

Minimum Capacity: **200 kWh**.

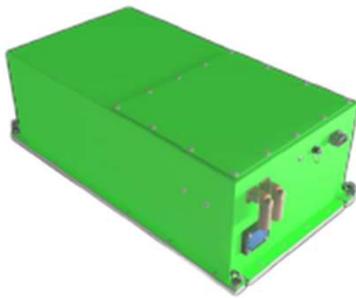
Known for its long cycle life, enhanced thermal stability, and safety profile.

LiNMC (Lithium Nickel Manganese Cobalt Oxide) based battery

Minimum Capacity: **36 kWh**

Offers higher energy density, making it suitable for applications requiring more compact energy storage.

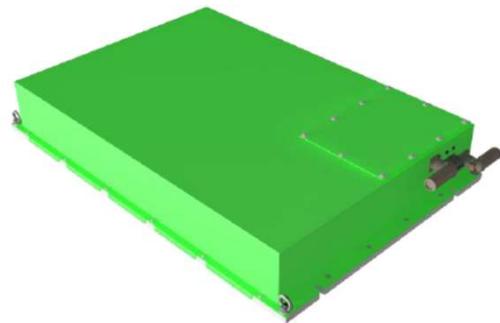
Powertronix battery solutions come with integrated Battery Management Systems (BMS), designed and manufactured in Italy. The BMS ensures safe and efficient operation of the battery packs by monitoring and controlling key parameters such as charging/discharging, temperature, and state of health. Battery modules can be designed for installation in standard 19" racks or in specifically designed cabinets, facilitating easy integration in a wide range of industrial and/or commercial environments.



Nominal voltage (Min/Max)	89.6VDC (70,0-102,2VDC)
Capacity	280 Ah
Battery cluster	Min 8 x 25 kWh= 200kWh
Standard Charge	0,5C equal to 140A
Quick Charge	1C equal to 280A @25°C
Standard Discharge	0,5C equal to 140A
Quick Discharge	1C equal to 280A @25°C
Life cycles	≥6000 at 80% DOD @ 25°C
Case	RAL6018 Galvanized Sheet Metal
IP grade	IP66
Dimensions (l x w x h mm)	975 x 515 x 335 mm
Weight	~215 kg

+ PTX090-280-TEO (LiFePo4)

Nominal voltage x module	388 VDC
Capacity	48 Ah
Battery cluster	Min 2 x 18kWh -> 36 kW/h
Standard Charge	0,5C equal to 24A
Quick Charge	1,4 C equal to 67A @25°C
Standard Discharge	0,5C equal to 24A
Quick Discharge	2,9C equal to 140A @25°C
Life cycles	≥2000 at 80% DOD @ 25°C
Case	RAL6018 Galvanized Sheet Metal
IP grade	IP54
Dimensions (LxWxH)	955 x 670 x 160 mm
Weight	~150 kg



+ PTX389-048-TEQ (LiNMC)

+ SOLAR BATTERY CHARGER

The **Solar Battery Charger (SBC)** enables the connection of any DC source to the ENERCLEVER UPS, with a maximum power capacity of up to 30 kWp per unit. It features six MPPT inputs rated at 5.5 kWp each, ensuring efficient energy harvesting and power management. The SBC is available in two versions: an **IP65-rated outdoor** model suitable for wall-mounted installations, and an **indoor rack-mount** version for standard 19" cabinets. The integrated display provides real-time information on power, system status, and alarms. The SBC also supports parallel operation, offering maximum operational flexibility. Its compact and robust design ensures easy integration in a wide range of applications, delivering reliability and long-term durability.

