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UPSAVER 3VO
MODULAR HI-POWER 3-PHASE UPS

English

UPSAVER 3VO BROCHURE

YOUR CRITICAL POWER SOLUTION PARTNER.

The Borri Group has been developing and building uninterruptible power systems since 1932 and is a global provider of power electronics systems and solutions for harsh industrial and demanding critical power requirements.

— Borri's R&D vast expertise in all facets of firmware, power electronics and mechanical design provides innovative solutions for tomorrows problems in Industrial and Critical Power applications.

— The company prides itself on its first-class service and superior engineering disciplines. To ensure sustained quality, Borri manages all its processes in house from feed studies to design, production and after sales service technology.

— Based in Bibbiena, Italy with over 15,000 m² production area, Borri operates across all five continents with subsidiaries in USA, Canada, Germany, UAE, India and Malaysia.

— It has also established a strong distributor network, able to deliver on site support and technical guidance indicative of our own capabilities.

Critical Power Solutions

Designing and building mission critical UPS's 1- and 3-Phase up to 21 MW.

Industrial Power Solutions

Designing, engineering and building customised AC and DC power supply systems for harsh industrial applications.

Service

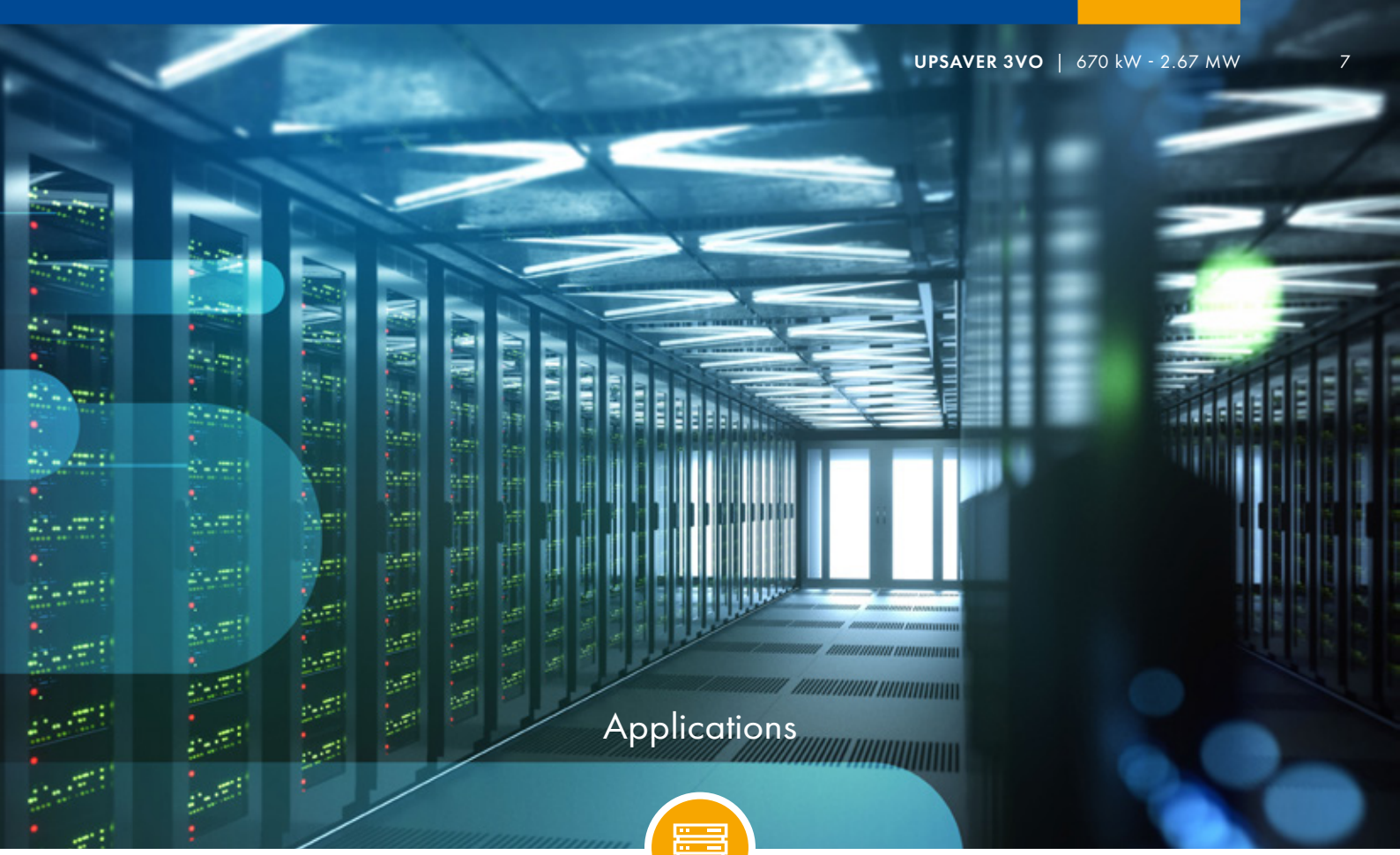
Borri team of experts support you to the highest standards no matter where you are in the world.

MODULAR HI-POWER
3-PHASE UPS

UPSAVER 3VO

from **670 kW** —— to **2.67 MW**

GREEN 3-L CONVERSION



Applications

Large
data centre

High Efficiency

Online double conversion VFI with the highest efficiency thanks to the patented 3-Level Green Conversion technology.

Modular hot swappable

Hot swappable and hot serviceable (VFI) modules ensuring lowest MTTR for highest overall availability.

3D Scalability

Up to 2.67 MW in a single unit, up to 21 MW in a parallel system and synchronized dual feed systems.

Borri 3rd Generation UPSaver 3vo high power modular UPS delivers unsurpassed performance for large and hyperscale data centres providing the highest level of availability for this power range, lowest power consumption and TCO.

UPSaver 3vo: designed for versatility and flexible power upgrade.

Main features

- Up to 97.2% online VFI efficiency*(certified by third party) and high efficiency operating modes.
- UPSaver 3vo operating modes providing best efficiency in all conditions: double conversion (VFI), ECO mode (VFD) and Ultra High Efficiency (VFD).
- Maximised efficiency and low TCO thanks to load matched output power adjustment.
- Hot scalable 333 kW power units with hot swap power packs thanks to optional distribution cabinets.
- Power parallel scalable up to 21 MW.
- High Genset compatibility thanks to minimum input capacitive power, unit input power factor, THDi <3% and programmable soft start features.
- Backfeed protection circuitry for maximum operator safety.
- Very small footprint.
- System design flexibility and total installation adaptability.
- Solutions for peak shaving.
- 10" colour touch screen display.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- VRLA and Li-Ion compatible.

*Conditions apply

Hot scalability & serviceability (on demand)

UPSaver 3vo can be configured with distribution sections including switches for rectifier, output and battery per each 333 kW modules. By this option, the unit can be upgraded and maintained while operating online VFI.

3-L Green Conversion Technology

Green Battery Management and Green Conversion technology save battery life, by mitigating the major root causes of battery ageing, such as ripple current and floating charge micro currents. UHE mode of operation dramatically increases the duration of wearing components.

PEP (Product Environmental Profile)

For UPSaver 3vo we draw up an EPD (Environmental Product Declaration) or PEP (Profil Environnemental Produit) in line with ISO14025: it is a declaration that is a sort of environmental photograph of the product.

The EPD is drawn up according to the concept of Life Cycle Assessment: it examines the environmental impact of a product throughout its life cycle, from the development of product specifications to the choice of materials to be used and the end-of-life destination of the product itself.

UPSAVER 3vo technical data

Rating (kVA)	670	1000	1340	1670	2000	2340	2670
N of modules	**2**	**3**	**4**	**5**	**6**	**7**	**8**
UPS dimensions WxDxH (mm)*	3800x970x2150	4450x970x2150	6550x970x2150	7200x970x2150	7650x1200x2150	8800x1200x2150	(***)
UPS weight (kg)*	2140	2710	4205	4775	5770	6630	(***)
Battery configuration	External 360 to 372 cells, VRLA , Li-Ion (other options)						
Input							
Connection type	Hardwire 4w (rectifier), 4w (bypass)						
Nominal voltage	400 Vac 3-phase with neutral (rectifier), 380/400/415 Vac 3-phase with neutral (bypass)						
Voltage tolerance	-20%, +15% (rectifier); ±10% (bypass)						
Frequency and range	50/60 Hz, 45 to 65 Hz						
Power factor	0.99						
Current distortion (THDi)	<3%						
Output							
Connection type	Hardwired 4w						
Nominal voltage	380/400/415 Vac 3-phase with neutral						
Frequency	50/60 Hz						
Voltage regulation	Static: ±1%; Dynamic: IEC/EN 62040-3 Class 1						
Power factor	Up to 1, without power derating						
Overload capacity**	Inverter: 105% continuous at 30°C, 125% for 10 min; 150% for 1 min; bypass: 110% continuous; 150% for 1 min; 700% for 100 ms; 1000% for 10 ms						
Efficiency (AC/AC)	Up to 99%						
Classification by IEC/EN 62040-3	VFI-SS-11						
Connectivity and function extensions							
Front panel	10" colour touch screen display, 1024x600 pixels						
Remote communication	**Included:** serial RS232; input terminal block (remote emergency power off, battery circuit breaker aux.cont., external maintenance bypass circuit breaker aux. cont., diesel mode aux.cont., external output circuit breaker aux. cont., remote transfer by bypass mode); SPDT contact relay board; ModBus-RTU (RS485); **Optional:** ModBus-TCP/IP (Ethernet)						
Optional features	Isolation transformer; battery cabinets; DC protection cabinets; battery thermal probe; parallel kit; load-sync for single UPS and load-sync box (2 UPS systems); other options on request						
System							
Protection degree	IP 20						
Colour	RAL 9005						
Installation layout	Wall, back to back and side by side installation allowed						
Accessibilty	Front and top access, bottom and top cable entry						
Parallel configuration	Up to 8 UPS, for a total of 21 MW						

*Full option version including top busbar entry module, main switches, hot swap distribution modules **Conditions apply ***Contact our sales team for confirmation

Other features

Environmental	
Operating temperature range	0°C to +40°C with no power derating
Storage temperature range	-10°C to +70°C
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m
Audible noise at 1 m (dBA)	< 65
Standards and certifications	
Quality assurance, environment, health and safety	ISO 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007
Safety	IEC/EN 62040-1
EMC	IEC/EN 62040-2
Environment aspects	IEC/EN 62040-4; ISO 14025
Test and performance	IEC/EN 62040-3
Protection degree	IEC 60529
Marking	CE

SERVICE

Customer's expectation defines Borri's priority from the early analysis of the project requirements to a worldwide commissioning and service. Many thousands of systems have been successfully installed and maintained globally, with continuous support from a highly trained team of expert, certified technicians and engineers. From the professional set-up of Borri's training centre or on site, the training and service team stand ready to provide support and contribute to tailored training at Borri or on site.You can be assured of Borri support to the highest standards no matter where in the world you are.

Planning, installation, commissioning

Borri assist you in every single step of your project. Our R&D team can analyse and develop solutions to a wide range of edge system requirements.

Analytical tests

Borri undertakes a series of analytical tests in order to guarantee higher efficiency and continuity to your system operation.

Repair & spare parts

All spare parts supplied by Borri are original, tested and guaranteed to be fully compliant with Borri solutions.

Remote monitoring

Guardian Net remote monitoring system allows you to detect any deviation from optimum operation and trigger proper and immediate response, so that anomalies don't evolve into issues.

Maintenance

Preventive maintenance guarantees uninterrupted operations and optimised system efficiency.

Battery tests

Batteries have a limited time life and their proper maintenance is of high importance to guarantee efficiency to the UPS and avoid potential failures. Borri delivers high quality and performing batteries to assure smooth operations.

Training

Borri offers distributors and customers a service training structured in 3 levels. Courses can be held in Borri training centres or on-site.

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