

INGENIO MAX

3-PHASE UPS

from 200 to 600 kW



YOUR CRITICAL POWER SOLUTION PARTNER.

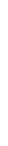
Borri has been developing and building uninterruptible power systems since 1932 and is a global provider of power electronics systems and solutions for harsh industrial and demanding critical power requirements.

— Borri's R&D vast expertise in all facets of firmware, power electronics and mechanical design provides innovative solutions for tomorrow's 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, UAE, India and Malaysia.

— Our strong trained and certified distributor network in every continent is able to provide on-site service 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.



OUR DEDICATION TO SUSTAINABLE POWER

At Borri, our commitment to sustainability and energy efficiency drives our constant pursuit of innovation, cutting-edge design, and advanced technology.

Our mission is to make a positive impact on the environment by ensuring the sustainability of our Uninterruptible Power Supplies (UPSs) throughout their entire lifecycle.



Borri is dedicated to putting its environmental commitment into action throughout the organization.

This includes actively promoting a low carbon footprint culture among our team members and customers, as well as developing sustainable products. Our approach involves all internal processes, from daily activities to the design of new products, with the goal of minimizing pollution and waste while maximizing product performance with minimal carbon footprint.



RESPONSIBLE DESIGN

Responsible design is at the heart of sustainable solutions: from efficiency to durability, from easy maintenance to a responsible component selection. Our Research and Development (R&D) and Engineering teams daily work to incorporate sustainability into every aspect of our products. To demonstrate our commitment, we have chosen to certify our major critical power products through a 3rd-party declaration with the PEP Association. For instance, our Ingenio Max series (ranging from 200 to 600 kW) has undergone an independent verification process, assessing the environmental impact at every stage of the product's lifecycle.

Design for Sustainability criteria play a pivotal role in the PEP score, considering factors such as material selection, minimized bill of quantities, high operational efficiency, repairability and reusability, as well as packaging design and short routes shipping strategies, to name a few. Borri has been ISO 14001 certified since 2011. The international standard "specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance". Additionally, our entire UPS range complies with the IEC/EN 62040-4 Product Standard.

The PEP, or Product Environmental Profile, is a manufacturer's declaration of a product's sustainability, according to a specific protocol outlined by the European Company Eco Passport. This protocol includes a comprehensive life cycle assessment, evaluating, by means of a quantitative analysis, greenhouse gas emissions and other environmental impact indicators, according to a "cradle-to-grave" approach. Customers can easily access this information online.



EMBRACING ENVIRONMENTALLY FRIENDLY PROCESSES

While product sustainability is crucial, Borri recognizes that environmental responsibility extends to our industrial processes and facilities. In line with our Group's E-less policy, we are dedicated to achieving annual reductions in energy consumption. Our efforts have included a thorough review and replacement of HVAC equipment, as well as the implementation of automatic lighting systems.

Some of our facilities feature a photovoltaic power plant, and we have ambitious plans to expand our solar power capacity and implement special energy storage systems for efficient utilization.

In our critical power testing area, where energy consumption can be significant, we have been using regenerative active loads since 2010. These loads enable us to massively reduce the energy typically consumed during testing of our Critical Power UPSs, which would otherwise be lost if using resistor-based loads.

Borri actively participates in our Group's Corporate Social Responsibility Program, taking concrete steps to address the environmental challenges of our time. We remain committed to intensifying our efforts in support of a more responsible and sustainable future.

UPS 3-PHASE

INGENIO MAX

from **200 kW** ————— to **600 kW**





Applications



Medium data centre



Large data centre



Network & Server



Industrial controls & process automation



Medical equipment



Building automation

Very High Efficiency

Patented 3-level Green Conversion technology.

Compact footprint

Some of the most compact footprints on the market and full front access.

Reduced TCO

Flexible system up to 4 MW in a minimum space.

Low Total Cost of Ownership, high efficiency and compact solution for supplying reliable uninterrupted quality power to all critical applications in networking and medium to large data centre, health, finance, industrial processing, building and transportation markets and for TLC.

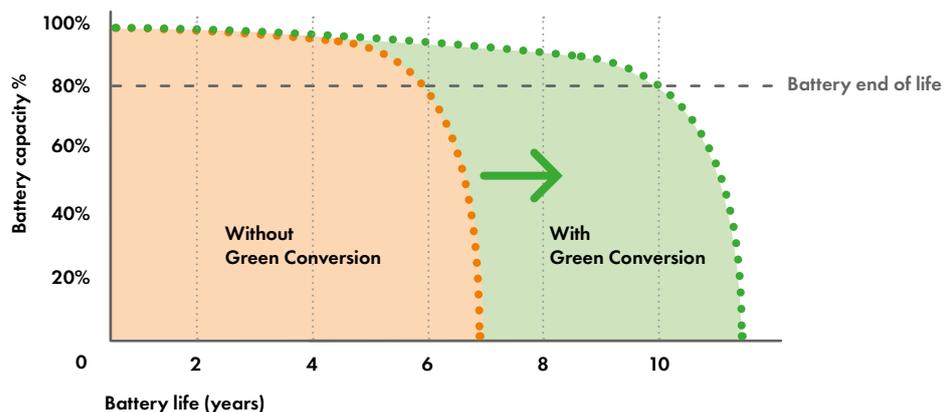
Ingenio Max: highest online efficiency in its class for a wide range of high power critical applications.



Features and benefits

- Three level Green Conversion, for enhanced system efficiency, very low noise and the lowest TCO in its category.
- Full output power rating ($pf=1$), ensuring optimal UPS sizing and high flexibility for all types of loads.
- On-line double conversion transformer-free design for low PUE and TCO.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and $THDi < 3\%$ for maximum upstream sources compatibility.
- Dynamic Charging Mode (DCM) for maximum versatility in long autonomy and low charging time applications.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- Increased power density, for unmatched floorspace saving.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with international product standards for maximum quality guarantee.
- Colour touch screen 10" display for easy monitoring and control.
- Lithium Battery compatible.

Green Conversion Battery Care vs conventional float charge enhanced battery service life



Main options

- Transformers/autotransformers for isolation or voltage adjustment.
- Battery voltage temperature compensation.
- External maintenance bypass wall-mounted box.
- Battery fuse switch wall-mounted box.
- Battery cabinets for long autonomy times.
- Parallel up to 8 units for system redundancy.
- Load-sync option.
- Common battery on selected models.
- Backfeed protection trip coil.

INGENIO MAX technical data

Rating (kVA)	200	250	300	400	500	600
Nominal Power (kW)	200	250	300	400	500	600
UPS dimensions WxDxH (mm)	880x970x1978			1430x970x1978		1630x970x1978
UPS weight (kg)	530	745	675	1080	1250	1400
Battery configuration	External 360 to 372 cells, VRLA (other options)					
Input						
Connection type	Hardwired 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: 110% for 10 min, 125% for 5 min, 150% for 30 s; Bypass: 150% continuous, 1000% for 1 cycle					
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	<p>Included: serial RS232 and USB, backfeed protection monitoring contact, 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 to bypass mode).</p> <p>Optional: SNMP adapter (Ethernet), Web interface (Ethernet), ModBus-TCP/IP (Ethernet), ModBus-RTU (RS485), from ModBus-RTU to PROFIBUS DP adapter; SPDT contact relay board; remote system monitoring panel; UPS managing and server shutdown software</p>					
Optional features	Common battery; central bypass; cold start; Input /Output/Bypass isolation transformer; other I/O voltages 480/690 Vac with autotransformers; external maintenance bypass; battery fuse switch box; custom battery cabinets; battery thermal probe; parallel kit; load-sync for single UPS and load-sync box (3 UPS systems); top cable entry; backfeed tripping coil for bypass disconnect; other options on request					
System						
Internal manual bypass	Included as standard					
Protection degree	IP 20					
Colour	RAL 9005					
Installation layout	Wall, back to back and side by side installation allowed					
Accessibility	Front access, bottom cable entry					
*according to IEC/EN 62040-3						
Other features						
Environmental						
Operating temperature range	0°C to +40°C					
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		< 72		< 80	
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					
Test and performance	IEC/EN 62040-3					
Protection degree	IEC 60529					
Marking	CE					

SERVICE & MAINTENANCE

— Borri service team is committed to providing unparalleled expertise and support, ensuring the safeguarding of our customers' investments. Promptly addressing any failures or anomalies in the client's systems, we strive to minimize economic and operational impact in the shortest time.

— Our highly trained team of expert, certified technicians and engineers carry out both preventive and corrective maintenance activities on all Borri UPS, STS models and batteries. By doing so, we guarantee uninterrupted system operation, mitigating any downtime and maintaining peak performance levels.

— From installation and commissioning to maintenance and tailored training at Borri facilities or on site our comprehensive support extends to the highest standards.

At Borri Service, we are focused on customer peace of mind and our goal is to set up the best value-added protection package, to minimize economic and time losses due to site shutdowns along the system entire life cycle.

How we can assist you



Planning, installation, commissioning

Many thousands of systems have been globally installed, with on-site support and technical guidance provided by our team of skilled and experienced engineers.



Maintenance

Preventive maintenance guarantees uninterrupted operation, optimized system efficiency and life expectancy.



Analytical tests

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



Battery tests

Batteries have a limited time life and their proper maintenance is of high importance to guarantee availability to the UPS and avoid potential failures.



Repair & spare parts

All spare parts supplied by Borri are original, tested and guaranteed to be fully compatible with the equipment.



Training

Borri offers distributors and customers training programs that can be held in Borri training center or on-site.

Maintenance plans for your critical equipment

Features	SERVICE CALL	LIGHT (ONMA)	BUSINESS (ONSI)
1 yearly preventive maintenance visit	•	•	•
Priority service (8 working hours)	•	•	•
Unscheduled maintenance visit (included labour costs and travel expenses)	Flat rate	•	•
Technical updates		•	•
Spare parts (batteries, capacitors, fans not included)			•
Additional preventive maintenance visit	Optional	Optional	Optional
Maintenance outside standard work hours	Optional	Optional	Optional
8 h response time (24/7)		Optional	Optional
4 h response time (24/7)		Optional	Optional



www.borri.it

BORRI HEADQUARTERS AND FACTORY

Borri S.p.A

Via 8 Marzo, 2
52011 Bibbiena (AR)
Italy
Tel. +39 0575 5351
Fax +39 0575 561811
info.borri.it@legrand.com

BORRI SUBSIDIARIES AND SERVICE CENTRES

Americas

Borri Power (US) Inc.
9000 Clay Road, Suit 104
Houston, Texas, 77080
USA
Tel. +1 346 212 2686
Fax +1 346 980 8875
info.borripower@legrand.com

Asia Pacific

Borri Asia Pacific
Engineering Sdn. Bhd.
No.13, Jalan Serendah 26/41,
Sekitar 26, Seksyen 26,
40400 Shah Alam, Selangor
Malaysia
Tel. +60 3 5191 9098
Fax +60 3 5103 8728
sales@borri-asia.com

India

Borri Power India Pvt. Ltd.
Plot No. 69, Ground Floor
Nagarjuna Hills, Panjagutta
Hyderabad, 500 082
India
Tel. +91 40 2335 4095
info.borri.it@legrand.com

Middle East and Africa

Borri Power
Middle East FZCO
1-151, Techno Hub
PO Box: 342036
Dubai Silicon Oasis, Dubai UAE
Tel. +971 4 3200528
Fax +971 4 3200529
info.borri.it@legrand.com

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