

INGENIO

Up to 2.1 MW, N+1

MAX XT

Scalable Hi-Power UPS



BORRI[®]

Borri INGENIO MAX XT is a scalable, high efficiency UPS system supplying reliable uninterrupted quality power to all critical applications. High efficiency operating modes and easy hot maintenance allow for lowest Capex and Opex. Flexible configuration and positioning make it totally adaptable to your facility and business.



Applications

- Data centres
- Continuous cooling
- Networking and telecommunication
- Large facilities
- Business-critical applications

3-L Green Conversion

On-line double conversion VFI with up to 97% efficiency thanks to 3-L Green Conversion technology based on a patented control algorithm, manages the subsystem to enhance system efficiency and reduces losses and component stress, leading to higher efficiency and component reliability. Green Conversion Battery Care also extends battery life resulting in lower TCO.

Flexible and scalable up to 2.1 MW

INGENIO MAX XT can operate in different flexible modes, including online double conversion and ECO mode. Borri INGENIO MAX XT uses a Load Based Shutdown algorithm to maximize the efficiency at light load in online VFI mode.

The system is scalable up to 2.1 MW unit power, for N+1, N+N and A+B redundant configurations, using fully rated 250 kW or 300 kW MPM power modules up to 40°C ambient temperature, to adapt to all facility needs. The 3-L Green Conversion inverter technology helps increase UPS reliability and availability. Hot maintainability allows to perform service activities under VFI operation. Flexible layout options help achieve constraint free positioning to fit any technical room space. Replaceable dust filters add full protection in dusty environment.

The system can be used with different energy storage solutions, including Lead Acid and Li-ion batteries. A centralized colour touch screen display provides all the user info and history information at a glance.

Reduced TCO

Borri INGENIO MAX XT provides scalable systems from 900 kW up to 2.1 MW which can be designed to meet your demanding needs thanks to its flexible features and options. The Borri patented 3-L Green Conversion design provides high power density in a minimum space to allow users to maximize the number of racks and servers installed in their data centres.

Highlights

- 250 kW and 300 kW modules.
- Hot scalable(*) up to 2.1 MW.
- Configurable internal redundancy provides a fault-tolerant design (N+1 or N+N).
- A 125% continuous-duty static switch provides robust overload capabilities.
- Hot maintainable modules (VFI) reduce mean time to repair and ensure no system downtime.
- Automatic battery test function.
- Compact footprint.
- 3-L patented Green Conversion Technology.
- Up to 97% VFI efficiency even at low power.
- ECO mode up to 99% efficiency.
- Low audible noise levels.
- System Design Flexibility.
- Total Installation Flexibility.
- Lowest total cost of ownership.

*optional



INGENIO MAX XT power protection system can be configured with 250 kW or 300 kW MPM power modules. Power expansion or redundancy can be implemented at a later stage by installing additional MPM modules up to 2.1 MW without needing to put the UPS on bypass (*). Thanks to its flexible design and installation you can meet your diverse business needs, either to grow or to revamp your mission-critical applications.



DAY 1 : 1200 kW

+



DAY 2 : 1500 kW

+



DAY 3 : 1800 kW

+



DAY 4 : 2100 kW

Flexible design

- Wide input voltage window and frequency ranges.
- Generator friendly thanks to adaptive soft start features.
- In-built 2N and N+1 parallel capability.
- Backfeed protection for human safety and compliance.
- Provides full mains filtering of noise, power factor and harmonics.
- Peak Shaving features.
- Lithium Battery compatible.

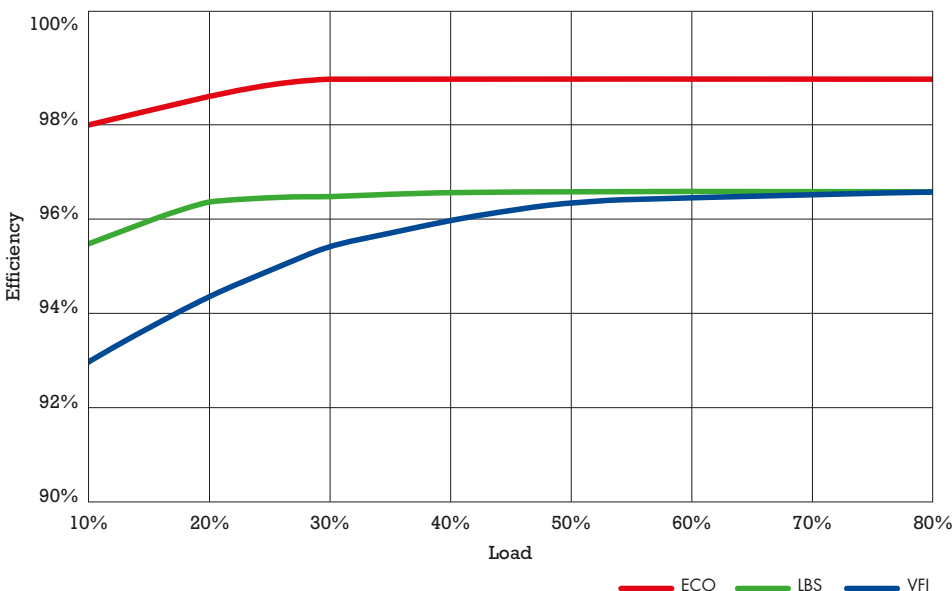
Infrastructure integration

- Compact footprint.
- Back-to-back or against-the-wall installation, no rear clearance needed.
- No derating temperature range up to 40°C.
- Low audible noise levels.
- Replaceable dust filter for dusty environments.
- Optional programmable relays.
- Top and bottom cable entry.
- Power increase capability for capacity or redundancy.

- External synchro box to support 2N, 2/3 or 3/ 4 systems.
- Hot scalable VFI option.
- In-built central static bypass providing high selectivity performance.
- Central or modular battery for adapting to all backup time requirements.

*optional

Highest Efficiency at any load



Load Based Shutdown algorithm enables output power to adapt to load requirement, whilst keeping highest VFI protection.

- Energy saving at data centre typical operation.
- Extended service life.
- Enhanced module performance.

Operation and Budget peace of mind.

INGENIO MAX XT technical data

Rating (kVA)	900	1000	1200	1250	1500	1800	2100
N nominal power (kW)	900	1000	1200	1250	1500	1800	2100
N+1 nominal power (kW)	600	750	900	1000	1200	1500	1800
MPM module size (kW)	300	250	300	250	300	300	300
UPS dimensions WxDxH (mm)*	3440x970x2100	4320x970x2100	4320x970x2100	5200x970x2100	5650x970x2100	6930x970x2100	7810x970x2100
UPS weight (kg)*	3590	4470	4470	5350	5350	6330	7210
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 (VFI)	Static: ±1%; dynamic: IEC/EN 62040-3 Class 1
Power factor	0.7 leading to 0.5 lagging without derating
Overload capability	Inverter: 125% for 10 min, 150% for 1 min; bypass: 125% continuous, 1000% for 1 cycle
AC/AC efficiency**	Up to 99%
Classification as per IEC/EN 62040-3	VFI-SS-111

Connectivity and function extensions

Front panel	10" colour touch screen display, 1024x600 pixels
Remote communication	Included: serial RS232 and USB; 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); SPDT contact relay board; ModBus-RTU (RS485). Optional: ModBus-TCP/IP (Ethernet); ModBus-RTU to PROFIBUS DP adapter
Optional features extensions	Isolation transformer; custom battery cabinets; battery thermal probe; load-sync; other options on request

System

Protection degree	IP 20
Colour	RAL 9005
Installation layout	Wall, back to back and side by side installation allowed
Accessibility	Front and top access, bottom and top cable entry
Scalability	Up to 2.1 MW

* referred to common battery, central bypass static switch, bottom cable entry. For other configurations contact our sales team ** according to IEC/EN 62040-3

Other features

Environmental

Operating temperature	0°C to +40°C
Storage temperature	-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 1m (dBA)	65

Standards and certifications

Quality assurance, environment, health and safety	ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007
Safety	IEC/EN 62040-1
EMC	IEC/EN 62040-2
Environmental aspects	IEC/EN 62040-4
Test and performance	IEC/EN 62040-3
Protection degree	IEC 60529
Marking	CE

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.

Maintenance

Preventive maintenance guarantees uninterrupted operations and optimized system efficiency.

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 efficiency to the UPS and avoid potential failures. Borri delivers high quality and performing batteries to assure smooth operations.

Repair & spare parts

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

Training

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

Remote monitoring

Borri Guardian Net improves Business Continuity by remote diagnostics and preventive monitoring of your UPS system and peripherals by preventing unpredictable anomalies to become failures.

Early detection of any deviations of critical parameter and prompt reaction in case of alarms result in extended uptime and enhanced operational efficiency.

Real time monitoring and periodic reports on the health of equipment provide complete peace of mind, delivering unparalleled support experience.

Extending Uptime

With a Borri Maintenance Contract, Guardian Net allows our Service specialists to take care of your system by monitoring its parameters and quickly reacting to anomalies.

Increasing Business Continuity

Guardian Net provides you with continuous monitoring of your system, giving you comprehensive operational awareness and providing technical recommendations and reports by Borri Service Centre for improving the quality and reliability of your system.

Reducing Total Cost of Ownership

Guardian Net is an on-site virtual Service specialist 24/7, monitoring all relevant parameters, maximizing system performance, reducing on-site maintenance and minimizing your total cost of ownership by extending the life of your critical equipment.



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Who we are

Borri Group is a global provider of power electronics systems and solutions for harsh industrial and demanding commercial and ICT secure power requirements merging over eighty years of experience in developing, manufacturing and supplying uninterruptible power systems and solutions.

The Research and Development Team's expertise combines AC and DC power technologies spanning the worlds of both conventional and renewable energy, to provide innovative solutions for tomorrows problems.

The company is comprised of three business units: Industrial Power, Critical Power and Renewable Power, headquartered in Bibbiena, Italy. Borri's latest products, based on Green Conversion operation, guarantee the best PUE for green data centres: proof of the ongoing company commitment to innovation.

Thanks to its highly skilled custom engineers Borri controls in-house the entire process: from feed studies to design, production and after-sales service guaranteeing state-of-the-art solutions. Based in Italy with over 20,000 m² production area and a large high power test field, Borri can depend on its more than 80 years of experience and multidisciplinary research and development to serve our customers best.