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INGENIO MAX XT
SCALABLE HI-POWER 3-PHASE UPS

English

BORRI

INGENIO MAX XT 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 20,000 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

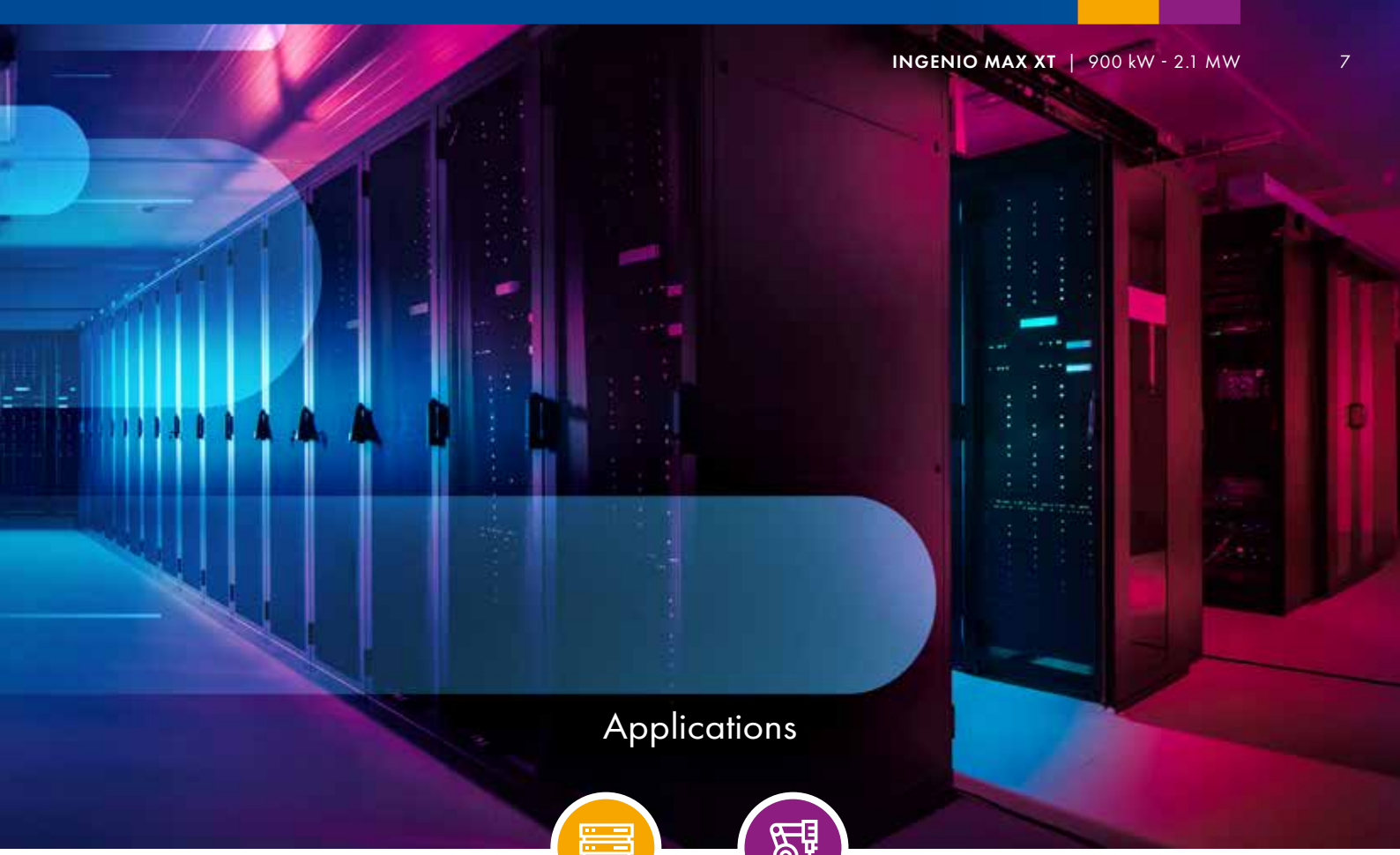
Borri team of experts support you to the highest standards no matter where you are in the world.

SCALABLE HI-POWER
3-PHASE UPS

INGENIO MAX XT

from **900** kW —— to **2.1** MW

GREEN 3-L CONVERSION



Applications

Large data centre

Industrial controls & process automation

High Efficiency

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

Scalable Modules

Scalable modules up to a 2.1 MW UPS to grow with your needs.

Reduced TCO

High power density in a minimum space maximizing the number of racks and servers installed in your data centres.

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.

Ingenio Max XT: scalable, flexible and efficient solution for both data centre and critical applications.

Features and benefits

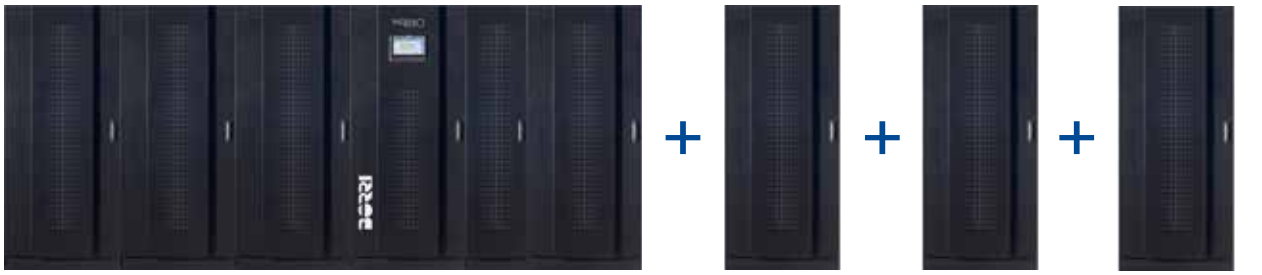
- 250 kW or 300 kW MPM scalable power modules rated at 40°C operating temperature, for lower TCO and high flexibility to grow on demand.
- Patented 3-Level Green Conversion technology for highest efficiency with optimal component count to increase reliability.
- Selectable hi-efficiency modes of operation.
- >96% VFI online efficiency starting from 40% load for very low TCO and meeting local regulations for subsidies (applies in some countries).
- Up to 99% high efficiency mode.
- Scalable up to 2.1 MW unit power, for N+1 and A+B redundant configurations.
- Available in Central or Distributed Static Bypass and Common or Modular Battery.
- Hot maintainable modules (VFI), reducing mean time to repair and ensuring no system downtime.
- Innovative design, resulting in reduced footprint, ease of maintenance and low audible noise levels.
- Hot scalability (in VFI mode) option to increase the availability of your system.
- Flexible and customisable mechanical features like top or bottom connections, L- or back to back configuration ensuring maximum system design flexibility.
- Centralised 10" colour touch screen display providing all user info and history information at a glance.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- Lithium Battery compatible.

Main options

- Manual Bypass Module.
- Hot-Scalable Extension module.
- Input Protection (Input and Bypass).
- 50 kA and 100 kA Input SC withstand.
- Peak Shaving.
- Load-sync option.
- Backfeed protection trip coil.

Fully Scalable System

Power expansion or redundancy can be implemented at a later stage by installing additional MPM modules up to 2.1 MW.



DAY 1 : 1200 kW DAY 2 : 1500 kW DAY 3 : 1800 kW DAY 4 : 2100 kW

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		5200x970x2100	5650x970x2100	6930x970x2100	7810x970x2100
UPS weight (kg)*	3590	4470		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	Static: ±1%; Dynamic: IEC/EN 62040-3 Class 1						
Power factor	Up to 1, without power derating						
Overload capacity	Inverter: 125% for 10 min, 150% for 1 min; bypass: 125% continuous, 1000% for 1 cycle						
Efficiency (AC/AC)**	Up to 99%						
Classification by 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	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						
Accessibilty	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 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
Test and performance	IEC/EN 62040-3
Protection degree	IEC 60529
Marking	CE

GUARDIAN NET REMOTE DIAGNOSTICS AND PREVENTIVE MONITORING

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.

BENEFITS

Extending Uptime

Together 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.

FEATURES

Web Proactive Maintenance

Our Service specialists monitor your equipment from the Borri Service Centre, analysing data and trends, to proactively recommend actions for ensuring equipment always performs at its best.

Warning and alarm notification

Guardian Net continuously monitors the system and should any critical parameters exceed the preset tolerance, it generates a warning or alarm notification to you and the Borri Service Centre. Our Service specialists will investigate the data, find the cause and take actions based on the customer's maintenance contract. This ensures that in case Service engineers are dispatched on-site, they arrive prepared for first time resolution, reducing downtime and increasing system availability.

Status Reports

The unit parameters are collected by our Service Centre and presented in periodic status reports. You will receive a comprehensive analysis of your equipment and its operational performance, as well as demonstration that it is under continuous remote monitoring.

Total Service Support

Borri supports critical infrastructures with a comprehensive offering of their Service specialists, enhancing system availability and ensuring total peace of mind 24/7.

Data Manager Unit (DMU) technical data

To monitored device	
Communication port	RS485 ModBus
Protocol	ModBus-RTU/ASCII slave
Max no. of connected devices*	16
To Service Centre	
Communication port	RJ45 Ethernet
Protocol	Open VPN (based on Open SSL), http, SMTP, ModBus-TCP/IP
Services	Web Server, NTP time stamping
Notification	**Included**: email - **Optional**: text message via https or via RS232 modem
Options	
	30 h backup battery, system integrator version (no box), GSM/GPRS modem (SIM card not included)
System	
Power supply	100 to 240 Vac
Installation	Wall-mounted box
Dimensions WxDxH (mm)	400x200x400
Weight	15 kg (w/ backup battery), 12 kg (w/o backup battery)
Protection degree	IP 20 (IP 65 on request)
Colour	RAL 7035
Environmental	
Operating temperature range	0°C to 40°C
Storage temperature range	-10°C to 70°C

*conditions apply

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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