

# INGENIO MAX

## 3-PHASE UPS

from 200 to 600 kW



English







INGENIO MAX 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 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 m<sup>2</sup> 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.



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.

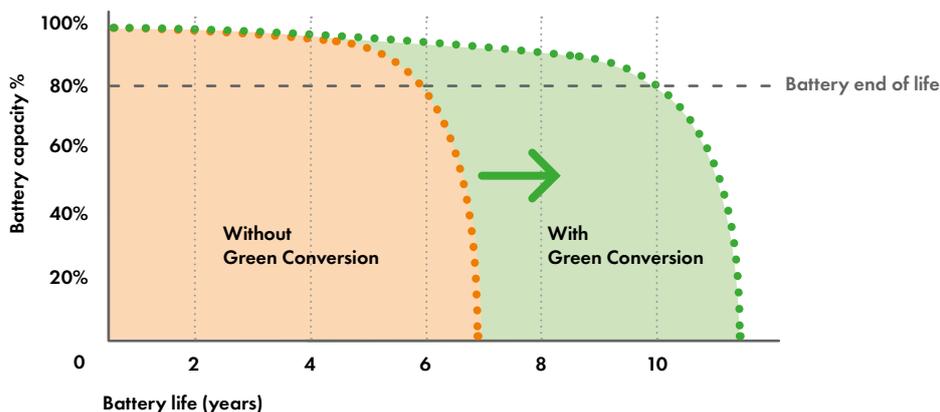
## Ingenio Max: highest online efficiency in its class for a wide range of high power critical applications.



### 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)					
<b>Input</b>						
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%					
<b>Output</b>						
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					
<b>Connectivity and function extensions</b>						
Front panel	10" colour touch screen display, 1024x600 pixels					
Remote communication	<p><b>Included:</b> 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><b>Optional:</b> 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 disconnecter; other options on request					
<b>System</b>						
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						
<b>Other features</b>						
<b>Environmental</b>						
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	
<b>Standards and certifications</b>						
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



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.

Since 1932,  
securing your  
power with passion  
and commitment.





[www.borri.it](http://www.borri.it)

**BORRI HEADQUARTERS  
AND FACTORY**

**Borri S.p.A**

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