PowerControl®

UNINTERRUPTIBLE POWER SOLUTIONS

INGENIO

Online double conversion 30 - 50kVA

Small footprint, transformer free design ideal for small data centres and server rooms

INGENIO Plus

Online double conversion 60 – 160kW

High power density, transformer free design, service friendly solution for critical network applications and small to medium sized data centres

INGENIO

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BORRI®

High Power Density

>1m3 = 80kW 10mins

Both in terms of the environment and space the Ingenio UPS range is not only one of the highest performance power protection solutions available but its compact design makes it ideal for environments where space is at a premium – delivering maximum power density.

Bringing together some of the most sophisticated technologies, the Ingenio series incorporates high double conversion efficiency and advanced high efficiency mode functions to deliver low running costs and minimal impact on the environment.

Servicing

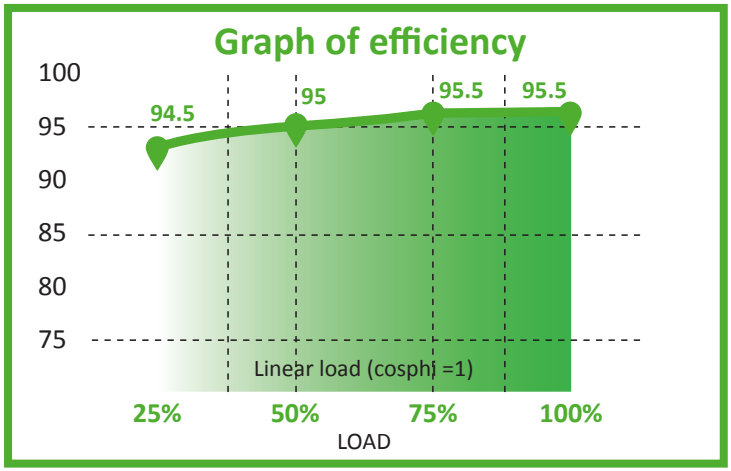
The exceptional architecture of the Ingenio series combines removable power modules, full frontal service and installation access* with integrated diagnostics for easy maintenance and servicing.

*Excluding internal batteries

Batteries within the Ingenio UPS range are installed in the base of the product frame, isolating them from any heat created by the electronics of the UPS. The batteries can be isolated and replaced easily without arranging switching of the system.

Operating modes

When operating in normal mode the Ingenio is a true online double conversion UPS. The series can also be configured and programmed to run as a frequency converter or in high efficiency mode as a line interactive system, which further reduces energy costs. For even greater efficiency the Ingenio Plus features an Ultra High Efficiency (UHE) mode, which can achieve up to 99% efficiency. In addition, the Ingenio Plus also incorporates Borri's patented Green Conversion technology, which increases efficiency and reduces switching stress on all components which have a finite service life.



The Technology

Drawing on nearly a century of design and development expertise within the power protection market, the Ingenio Plus UPS series from Borri is one of the most technologically advanced of its kind.

The transformer free UPS features full Isolated Gate Bipolar Transistor (IGBT) technology to provide both input and output unity power factor.* Intuitive operating modes and exceptional engineering standards have ensured that the Ingenio Plus UPS range delivers unparalleled power resilience.

* Output Ingenio Plus only

Advanced connectivity is achieved through an LCD graphic or touch screen display, giving concise and rapid access to the UPS status. Remote monitoring is also available to any workstation or web based mobile device.

INGENIO

INGENIO
Online double conversion 30 - 50kVA

The Ingenio is one of the most cost and space efficient power protection solutions on the market. It has been designed using the same time honoured Italian craftsmanship that Borri has become synonymous for and as such it not only boasts superior efficiency but also unbeatable power resilience.

Achieving only 3% input total harmonic distortion (THDi) and 0.99 input power factor (PF) the Ingenio series has a negligible effect on the mains supply thanks to the superior design of the rectifier, allowing right sized cables, switchgear and other standby inputs.

The transformer free UPS can be configured with multiple units in parallel or with synchronised outputs for true redundancy, completely removing any single points of failure.

1. Scalable up to six units in parallel for power or redundancy requirements
2. Full front access for switching, connection and communication
3. Full IGBT technology with power factor corrected rectifier
4. Internal batteries for 10mins at full load

INGENIO Plus

INGENIO Plus
Online double conversion 60 – 160kW

The Ingenio Plus has been specifically designed to be a high performance, low cost of ownership UPS solution that not only delivers ultimate power protection but also maximum power density. The sophisticated architecture of the Ingenio Plus combines a compact internal battery layout (up to 80kW), high efficiency double conversion and advanced energy saving modes to ensure low operating costs.

Borri 's Green Conversion technology helps to dramatically reduce maintenance costs whilst extending all critical components and battery service life.

1. **Ultra High Efficiency** (UHE) – Up to 99.5% efficiency
2. **Smart Parallel UPS** on demand technology
3. **Energy Manager Selection** Select the appropriate operating mode for the current data centre environment
4. **Full front access** Installation, Servicing and cooling requirements all from the front
5. **Unity output power factor** kVA = kW without any de-rating upto 40°C

INGENIO
30 -50kVA

POWER	30kVA	40kVA	50kVA
Capacity (kW)	27	36	45
Dimensions W x D x H (mm)	505 x 940 x 1505		
Weight (kg)	140	150	190
Input/output connection	Hardwired from bottom (top input available upon request)		
Battery	Internal or External, 360 / 372 cells		
INPUT			
Nominal voltage	220/380, 230/400, 240/415 VAC three phase + N		
Voltage range	-20%, +15% from nominal		
Frequency	50/60Hz (45-65Hz)		
Power factor	> 0.99		
Current distortion (THDi)	< 3%		
OUTPUT			
Nominal voltage	220/380, 230/400, 240/415 VAC three phase + N		
Frequency	50/60 Hz		
Voltage regulation	±1% static; ±5% dynamic 100% load change, <20 ms recovery time		
PF acceptable without de-rating	Lagging to 0.9 leading		
Overload capacity	101-125% for 10 minutes (on-line); 126-150% for 30 seconds (on-line); 1000% for 1 cycle (bypass)		
Efficiency	> 96%		
EPS (Eco-mode)	> 98%		
Options	Parallel capacity/redundancy; isolation transformer; external bypass; battery thermal probe; top cable entry		
USER INTERFACE			
Front panel	Graphical LCD display, mimic with LED's and keyboard		
Standard communication ports	RS232 serial port, USB port, Emergency Power Off input, Battery switch monitoring port		
Optional	Web/SNMP, Modbus, Relay, Modem cards; Remote panel; Monitoring and shutdown software		
ENVIRONMENTAL			
Operating temperature	0°C - +40°C (SLA batteries 20-25°C)		
Storage temperature	-10°C - +70°C		
Altitude	<1000m		
Audible noise at 1 meter (dBA)	<52		<57

Full technical specification and product information can be found at www.pcl-ups.com

INGENIO Plus
60 -160kVA

POWER	60kVA	80kVA	100kVA	125kVA	160kVA
Capacity (kW)	60	80	100	125	160
Dimensions W x D x H (mm)	560 x 940 x 1800				
Weight (kg)	250	300	320	360	380
Input/output connection	Hardwired from bottom (top input available upon request)				
Battery	Internal or External, 360 / 372 cells		External, 360 / 372 cells		
INPUT					
Nominal voltage	220/380, 230/400, 240/415 VAC three phase + N				
Voltage range	-20%, +15% from nominal				
Frequency	50/60Hz (45-65Hz)				
Power factor	> 0.99				
Current distortion (THDi)	< 3%				
OUTPUT					
Nominal voltage	220/380, 230/400, 240/415 VAC three phase + N				
Frequency	50/60 Hz				
Voltage regulation	±1% static; ±5% dynamic 100% load change, <20 ms recovery time				
PF acceptable without de-rating	Unity				
Overload capacity	101-125% for 10 minutes (on-line); 126-150% for 30 seconds (on-line); 1000% for 1 cycle (bypass)				
Efficiency	> 96%				
EPS (Eco-mode)	> 98%				
Options	Parallel capacity/redundancy; isolation transformer; external bypass; battery thermal probe; top cable entry				
USER INTERFACE					
Front panel	Graphical LCD display, mimic with LED's and keyboard (7" touch screen available upon request)				
Standard communication ports	RS232 serial port, USB port, Emergency Power Off input, Battery switch monitoring port				
Optional	Web/SNMP, Modbus, Relay, Modem cards; Remote panel; Monitoring and shutdown software				
ENVIRONMENTAL					
Operating temperature	0°C - +40°C (SLA batteries 20-25°C)				
Storage temperature	-10°C - +70°C				
Altitude	<1000m				
Audible noise at 1 meter (dBA)	<60				

Full technical specification and product information can be found at www.pcl-ups.com

THE POWER AUTHORITY

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