

www.borri.it

**BORRI**

# INGENIO COMPACT

3-PHASE UPS  
from 10 to 20 kW



English



**90** YEARS  
SINCE 1932





INGENIO COMPACT 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 COMPACT

from **10 kW** ———— to **20 kW**



## Applications



Small  
data centre



Medium  
data centre



Network  
& Server



Telecommunication

### Innovative design

User-friendly design with built-in LCD touch screen for fast installation and monitoring.

### Wide battery range

Internal and external batteries for low TCO compact solutions.

### Power factor 1

Full rated output power guaranteeing maximum real power and optimal UPS sizing.

One of the most compact and easy to use solutions on the market, designed for critical power applications such as networks and servers, small and medium data centres, telecommunication.

The UPS is available in the 10-20 kW range with online double conversion technology and parallel redundant configuration.

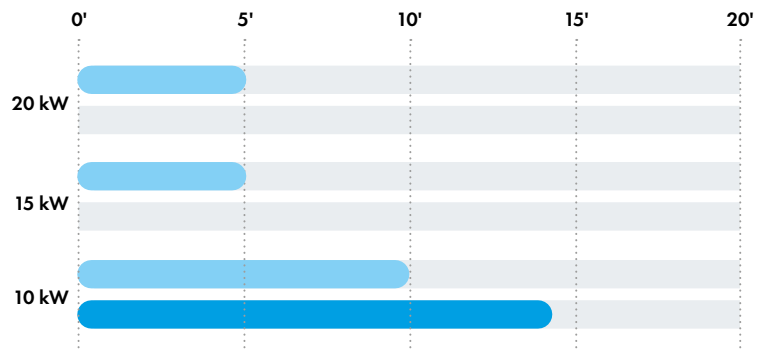
**Ingenio Compact:** transformer free, high efficiency, compact and easy to install and use.



### Features and benefits

- On-line double conversion mode for total load protection.
- ECO mode for low running costs and environmental impact.
- Full rated output power (pf=1), ensuring optimal UPS sizing and utilization.
- Transformer free design for light small size layout.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and low THDi for maximum upstream sources compatibility.
- Wide input voltage range to save battery life.
- Wide range of configurations with internal and external batteries for low TCO compact solutions.
- Innovative design allows for fast installation.
- Removable tray design for easy battery maintenance.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with all international product standards for maximum quality guarantee.

### Back up time with internal batteries



### Main options

- Isolation transformer.
- Transformers/autotransformers for voltage adjustment.
- Battery voltage temperature compensation.
- External maintenance bypass wall-mounted box.
- External battery cabinets for long autonomy times.
- Parallel redundant up to 6 units for system redundancy.
- Common battery.



## INGENIO COMPACT technical data

Rating (kVA)	10	15	20
Nominal Power (kW)	10	15	20
UPS dimensions WxDxH (mm)	440x800x800		
UPS weight (kg)	75	76	76
UPS weight with internal battery (kg)	150	165	165
External battery module dimensions WxDxH (mm)	550x650x1200		
Battery configuration	Internal (standard): 180 cells; external: 156/240 cells	Internal (standard): 216 cells; external: 192/240 cells	
<b>Input</b>			
Connection type	Hardwired 4w		
Nominal voltage	400 Vac 3-phase with neutral		
Voltage tolerance	-20%, +15% (rectifier); ±10% (bypass)		
Frequency and range	50/60 Hz, 40 to 70 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		
Power factor	Up to 1, without power derating		
Overload capacity	110% for 60 min, 125% for 10 min, 150% for 1 min		
Efficiency (AC/AC)*	Up to 98%		
Classification by IEC/EN 62040-3	VFI-SS-11		
<b>Connectivity and function extensions</b>			
Front panel	Touch screen display		
Remote communication	<b>Included:</b> serial RS232; backfeed protection monitoring contact, remote EPO contact. <b>Optional:</b> 2 slots for SNMP adapter, ModBus-RTU, contact relay card		
Optional function extensions	Isolation transformer; transformers/autotransformers for voltage adjustment; external maintenance bypass; custom battery cabinets; wall-mounted battery fuse switch box; battery thermal probe; parallel kit; other options on request		
<b>System</b>			
Protection degree	IP 20		
Colour	RAL 9005		
Installation layout	30 cm wall-gap		
Accessibility	Positioning casters; bottom cable entry		

\* according to IEC/EN 62040-3

## Other features

<b>Environmental</b>	
UPS operating temperature range	0°C to +40°C
UPS 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)	< 52
<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

# 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.



**BORRI**  
GUARDIAN NET

## 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

<b>To monitored device</b>	
Communication port	RS485 ModBus
Protocol	ModBus-RTU/ASCII slave
Max no. of connected devices*	16
<b>To Service Centre</b>	
Communication port	RJ45 Ethernet
Protocol	Open VPN (based on Open SSL), http, SMTP, ModBus-TCP/IP
Services	Web Server, NTP time stamping
Notification	<b>Included:</b> email - <b>Optional:</b> text message via https or via RS232 modem
<b>Options</b>	
	30 h backup battery, system integrator version (no box), GSM/GPRS modem (SIM card not included)
<b>System</b>	
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
<b>Environmental</b>	
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.

Since 1932,  
securing your  
power with passion  
and commitment.





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

**BORRI HEADQUARTERS  
AND FACTORY**

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