www.borri.it

ECS
EMERGENCY CENTRAL SYSTEMS
from 10 to 160 kVA

English

YOUR CRITICAL POWER SOLUTION PARTNER.

Borri 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 15,000 m² production area, Borri operates across all five continents with subsidiaries in USA, Canada, UAE, India and Malaysia.

— Our strong trained and certified distributor network in every continents is able to provide on-site service 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.

OUR DEDICATION TO SUSTAINABLE POWER

At Borri, our commitment to sustainability and energy efficiency drives our constant pursuit of innovation, cutting-edge design, and advanced technology.

Our mission is to make a positive impact on the environment by ensuring the sustainability of our Uninterruptible Power Supplies (UPSs) throughout their entire lifecycle.

Borri is dedicated to putting its environmental commitment into action throughout the organization.

This includes actively promoting a low carbon footprint culture among our team members and customers, as well as developing sustainable products. Our approach involves all internal processes, from daily activities to the design of new products, with the goal of minimizing pollution and waste while maximizing product performance with minimal carbon footprint.

RESPONSIBLE DESIGN

Responsible design is at the heart of sustainable solutions: from efficiency to durability, from easy maintenance to a responsible component selection. Our Research and Development (R&D) and Engineering teams daily work to incorporate sustainability into every aspect of our products. To demonstrate our commitment, we have chosen to certify our major critical power products through a 3rd-party declaration with the PEP Association. For instance, our Ingenio Max series (ranging from 200 to 600 kW) has undergone an independent verification process, assessing the environmental impact at every stage of the product's lifecycle.

Design for Sustainability criteria play a pivotal role in the PEP score, considering factors such as material selection, minimized bill of quantities, high operational efficiency, repairability and reusability, as well as packaging design and short routes shipping strategies, to name a few.
Borri has been ISO 14001 certified since 2011. The international standard "specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance". Additionally, our entire UPS range complies with the IEC/EN 62040-4 Product Standard.

The PEP, or Product Environmental Profile, is a manufacturer's declaration of a product's sustainability, according to a specific protocol outlined by the European Company Eco Passport. This protocol includes a comprehensive life cycle assessment, evaluating, by means of a quantitative analysis, greenhouse gas emissions and other environmental impact indicators, according to a "cradle-to-grave" approach.
Customers can easily access this information online.

EMBRACING ENVIRONMENTALLY FRIENDLY PROCESSES

While product sustainability is crucial, Borri recognizes that environmental responsibility extends to our industrial processes and facilities. In line with our Group's E-less policy, we are dedicated to achieving annual reductions in energy consumption. Our efforts have included a thorough review and replacement of HVAC equipment, as well as the implementation of automatic lighting systems.

Some of our facilities feature a photovoltaic power plant, and we have ambitious plans to expand our solar power capacity and implement special energy storage systems for efficient utilization.

In our critical power testing area, where energy consumption can be significant, we have been using regenerative active loads since 2010. These loads enable us to massively reduce the energy typically consumed during testing of our Critical Power UPSs, which would otherwise be lost if using resistor-based loads.

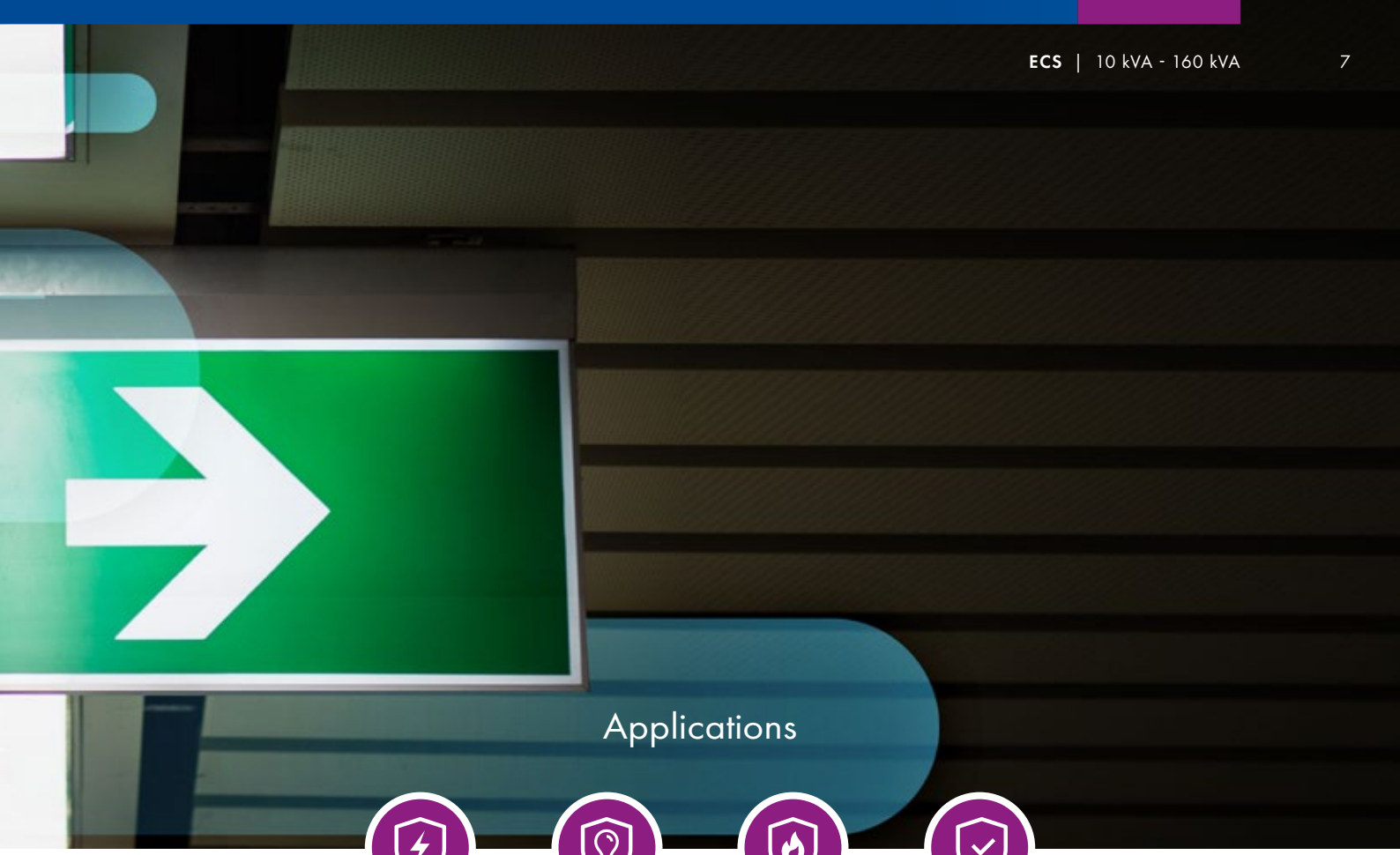
Borri actively participates in our Group's Corporate Social Responsibility Program, taking concrete steps to address the environmental challenges of our time. We remain committed to intensifying our efforts in support of a more responsible and sustainable future.

EMERGENCY CENTRAL SYSTEMS
1- and **3-PHASE**

ECS

from **10** kVA —— to **160** kVA

GREEN CONVERSION



Applications

- Emergency and safety systems
- Emergency lighting
- Fire fighting
- Safety equipment

Compliant with EN 50171

Ensuring setup and maintenance cost reduction and easier periodical checks.

High recharge current

Battery charger providing 80% autonomy within 12 hours.

High overload capacity

Designed to withstand 120% permanent power overload capability.

Emergency Central Systems designed in compliance to the international EN 50171 standard, supplying uninterrupted quality power to emergency and safety installations. Suitable for emergency and safety systems, emergency lighting, fire fighting and safety equipment.

ECS: designed to guarantee power supply to your safety system in case of mains supply failure.

Compliance to EN 50171 standard

- 120% permanent power overload capability.
- Batteries with 10 years life expectancy.
- Battery polarity reversal protection.
- Deep discharge protection.
- Short circuit protection.
- Battery charger to provide 80% autonomy within 12 hours.
- Battery charger temperature compensation.
- IP20 metal enclosure as per EN 60598-1.

Features and benefits

- Green Conversion technology, providing high efficiency and UPS components' life extension.
- Compact transformer free design for small footprint.
- Easy access for fast maintenance and low MTTR.
- Acid proof battery cabinets and racks.

Main options

- AO+EO mode kit.
- Isolation transformer.
- Separate rectifier and bypass input for E8000 ECS 3-phase output models.
- Parallel kit.
- Backfeed protection (standard with 10, 15 and 20 kVA ratings).

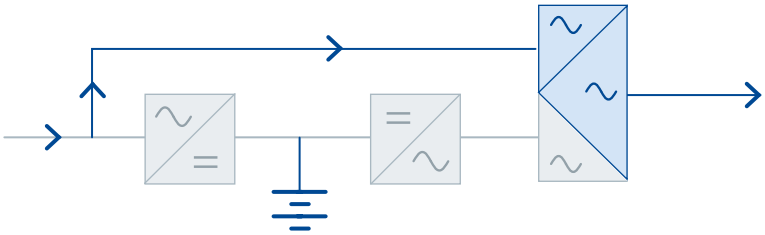
E8000 ECS 10-20 kVA

INGENIO ECS 100-160 kVA

Operating mode

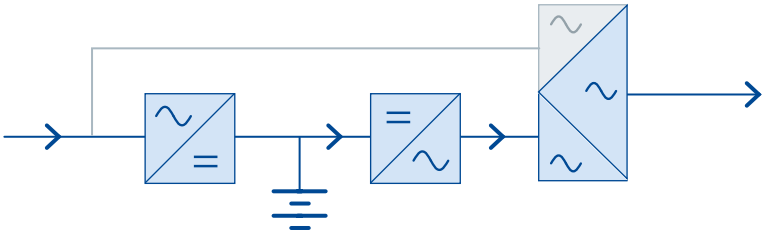
Changeover mode - Always On (AO)

Loads are normally fed by the bypass line, during a mains failure the inverter takes over the load without interruption.



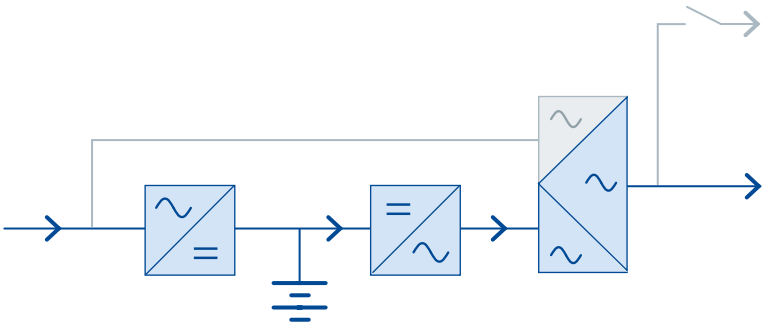
Mode without interruption - Always On (AO)

Loads are normally fed by the inverter output.



Changeover mode with additional control switching device for partial switching of the load - Always On + Emergency Only (AO+EO)

The "Always on" part of the load is fed continuously whilst the "Emergency Only" part is only fed upon mains failure.



E8031 ECS - E8033 ECS technical data

Rating (kVA)	**10**	**15**	**20**
Nominal Power (kW)	**9**	**13.5**	**18**
Nominal power as per EN 50171 (kW)	**7.5**	**11.3**	**15**
UPS dimensions WxDxH (mm)	450x670x1200		
UPS weight (kg)	100	110	110
Battery configuration	External, 360 to 372 cells, VRLA (other options)		
Input			
Connection type	3/1-phase units: hardwired 4w (rectifier), 2w (bypass) 3/3-phase units: hardwired 4w (separate bypass input available on request)		
Nominal voltage	400 Vac 3-phase with neutral (rectifier) 220/230/240 Vac (3/1-phase 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)	<4%		
Output			
Connection type	3/1-phase units: hardwired 2w 3/3-phase units: hardwired 4w		
Nominal voltage	3/1-phase units: 220/230/240 Vac 1-phase 3/3-phase units: 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 0.9, without power derating		
Overload capacity*	120% continuous, 150% for 10 min		
Efficiency (AC/AC)**	Up to 98%		
Classification by IEC/EN 62040-3	VFI-SS-11		
Connectivity and function extensions			
Front panel	Graphic display, mimic LED panel and keyboard, local EPO		
Remote communication	Included: serial RS232 and USB; terminal block for battery breaker auxiliary contact. Optional: input terminal block (remote emergency power off, external maintenance bypass circuit breaker aux. cont., diesel mode aux. cont.); 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		
Optional features	Isolation transformer; transformers/autotransformers for voltage adjustment; external maintenance bypass; custom battery cabinets; wall-mounted battery fuse switch box; battery thermal probe; load-sync; AO+EO mode kit; separate input for rectifier and bypass line (for 3-phase output models); parallel kit; other options on request		
System			
Protection degree	IP 20		
Colour	RAL 7016		
Installation layout	10 cm wall-gap, side by side installation allowed		
Accessibilty	Front and top access, bottom cable entry		

*as per EN 50171 **as per IEC/EN 62040-3

Other features

Environmental	
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)	< 52
Standards and certifications	
CPSS	EN 50171
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001
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

INGENIO ECS technical data

Rating (kVA)	**30**	**40**	**60**	**80**	**100**	**125**	**160**
Nominal Power (kW)	**30**	**40**	**60**	**80**	**100**	**125**	**160**
Nominal power as per EN 50171 (kW)	**25**	**33.3**	**50**	**67**	**83**	**104**	**133**
UPS dimensions WxDxH (mm)	465x650x1230		560x940x1500		560x940x1800		
UPS weight (kg)	120	140	190	215	320	360	380
Battery configuration	External, 360 to 372 cells, VRLA (other options)						
Input							
Connection type	Hardwired 4w		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*	120% continuous, 150% for 10 min						
Efficiency (AC/AC)**	Up to 99%						
Classification by IEC/EN 62040-3	VFI-SS-11						
Connectivity and function extensions							
Front panel	Graphic display, mimic LED panel and keyboard, local EPO						
Remote communication	Included: 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.). Optional: 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						
Optional features	Isolation transformer; transformers/autotransformers for voltage adjustment; external maintenance bypass; custom battery cabinets; wall-mounted battery fuse switch box; battery thermal probe; parallel kit, load-sync; AO+EO mode kit; backfeed protection; other options on request						
System							
Protection degree	IP 20						
Colour	RAL 9005						
Installation layout	10 cm wall-gap, side by side installation allowed		Wall and side by side installation allowed				
Accessibilty	Front and top access,bottom cable entry				Front access, bottom cable entry		

*as per EN 50171 **as per IEC/EN 62040-3

Other features

Environmental	
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)	< 60
Standards and certifications	
CPSS	EN 50171
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001
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 & MAINTENANCE

Borri service team is committed to providing unparalleled expertise and support, ensuring the safeguarding of our customers' investments. Promptly addressing any failures or anomalies in the client's systems, we strive to minimize economic and operational impact in the shortest time.

Our highly trained team of expert, certified technicians and engineers carry out both preventive and corrective maintenance activities on all Borri UPS, STS models and batteries. By doing so, we guarantee uninterrupted system operation, mitigating any downtime and maintaining peak performance levels.

From installation and commissioning to maintenance and tailored training at Borri facilities or on site our comprehensive support extends to the highest standards.

At Borri Service, we are focused on customer peace of mind and our goal is to set up the best value-added protection package, to minimize economic and time losses due to site shutdowns along the system entire life cycle.

How we can assist you

Planning, installation, commissioning

Many thousands of systems have been globally installed, with on-site support and technical guidance provided by our team of skilled and experienced engineers.

Maintenance

Preventive maintenance guarantees uninterrupted operation, optimized system efficiency and life expectancy.

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 availability to the UPS and avoid potential failures.

Repair & spare parts

All spare parts supplied by Borri are original, tested and guaranteed to be fully compatible with the equipment.

Training

Borri offers distributors and customers training programs that can be held in Borri training center or on-site.

Maintenance plans for your critical equipment

Features	SERVICE CALL	LIGHT (ONMA)	BUSINESS (ONSI)
1 yearly preventive maintenance visit	•	•	•
Priority service (8 working hours)	•	•	•
Unscheduled maintenance visit (included labour costs and travel expenses)	Flat rate	•	•
Technical updates		•	•
Spare parts (batteries, capacitors, fans not included)			•
Additional preventive maintenance visit	Optional	Optional	Optional
Maintenance outside standard work hours	Optional	Optional	Optional
8 h response time (24/7)		Optional	Optional
4 h response time (24/7)		Optional	Optional

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