

UPS & CRITICAL POWER CATALOGUE





UPS & CRITICAL POWER CATALOGUE

CONTENTS

Who we are	06
-------------------	-----------

SUSTAINABILITY	08
Our dedication to sustainable power	

CRITICAL POWER SOLUTIONS	10
For computers and peripherals, data centres, networks and servers	

CRITICAL POWER SOLUTIONS	12
For industrial controls, process automation, medical equipment, building automation and emergency systems	













GIOTTO	16
LINE INTERACTIVE 1-PHASE UPS 1000-2000 VA	
For computers and peripherals	

GALILEO PLUS	18
ON-LINE 1-PHASE RT UPS 1000-3000 VA	
For networks and servers	

LEONARDO	20
ON-LINE 1-PHASE T UPS 6-10 kVA	
For networks and servers, small data centres	

LEONARDO PLUS	22
ON-LINE 1-PHASE RT UPS 6-10 kVA	
For networks and servers, small data centres	

MONITORING SOFTWARE	24
For 1-phase UPS's	

 B8031FXS - B8033FXS	26		
3/1- AND 3/3-PHASE UPS 10-20 kVA For networks and servers, industrial controls and process automation, medical equipment and building automation			
 INGENIO COMPACT	30		
3-PHASE UPS 10-20 kVA For networks and servers, small and medium data centres, telecommunication			
 INGENIO PLUS	34		
3-PHASE UPS 30-160 kVA/kW For small and medium data centres, networks and servers, industrial controls and process automation, medical equipment and building automation			
 INGENIO MAX	38		
3-PHASE UPS 200-600 kVA/kW For medium data centres, networks and servers, industrial controls and process automation, medical equipment, building automation			
 B9000 FXS	42		
3-PHASE UPS 60-300 kVA Transformer based UPS for networks and servers, industrial control and process automation, medical equipment, building automation			
 B9600 FXS	46		
3-PHASE UPS 400-800 KVA Hi-power transformer based UPS for networks and servers, industrial controls and process automation, medical equipment and building automation			
 UPSAVER 3VO		50	
MODULAR 3-PHASE UPS 670 kW - 2.67 MW For large data centres			
 ECS Emergency Central Systems		54	
3/1- AND 3/3-PHASE E8000 ECS 10-20 KVA 3-PHASE INGENIO ECS 30-160 KVA For emergency lighting, fire fighting and safety equipment according to EN 50171			
 STS 16-32 A		62	
1-PHASE RACKMOUNT STS Rackmount Static Transfer Switches for networks and servers, data centres, industrial controls and process automation			
 STS 100-2000 A		64	
3-PHASE CENTRALISED STS Centralised Static Transfer Switches for networks and servers, data centres, industrial controls and process automation			
 LI-ION BATTERY SOLUTIONS		68	
To backup critical applications with reduced footprint, high power density and to meet peak shaving demand for flexible energy management			
INDUSTRIAL POWER SOLUTIONS		70	
For harsh industrial applications			
SERVICE & MAINTENANCE		72	

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 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 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 continent 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.

UPS FOR COMPUTERS AND PERIPHERALS, DATA CENTRES, NETWORKS AND SERVERS.

from **1000 VA** ————— to **21 MW**



1-PHASE UPS & STS

Giotto

Line interactive 1-Phase UPS
from 1000 to 2000 VA

Galileo Plus

On-line 1-Phase UPS
from 1000 to 3000 VA

Leonardo - Leonardo Plus

On-line 1-Phase UPS
from 6 to 10 kVA

STS 16-32

1-Phase Static Transfer Switches
16 and 32 A



3-PHASE UPS & STS

B8031FXS

3/1-Phase UPS
from 10 to 20 kVA

B8033FXS

3/3-Phase UPS
from 10 to 20 kVA

Ingenio Compact

3-Phase UPS
from 10 to 20 kVA

Ingenio Plus

3-Phase UPS
from 30 to 160 kW

Supplying both standalone and modular UPS, Borri provides the best power protection solution whether your business is a small office or a hyperscale data centre.



COMPUTER AND PERIPHERAL



SMALL AND MEDIUM DATA CENTRE



NETWORK AND SERVER



LARGE DATA CENTRE



B9000FXS
Transformer 3-Phase UPS
from 60 to 300 kVA

B9600FXS
Transformer 3-Phase UPS
from 400 to 800 kVA

Ingenio MAX
3-Phase UPS
from 200 to 600 kW

NEW **STS 300**
3-Phase Static Transfer Switches
from 100 to 2000 A



DATA CENTRE UPS'S AND SYSTEMS

UPSaver 3vo
Modular high-power UPS
from 670 kW to 21 MW

NEW **STS 300**
3-Phase Static Transfer Switches
from 100 to 2000 A

UPS FOR INDUSTRIAL CONTROLS, PROCESS AUTOMATION, MEDICAL EQUIPMENT, BUILDING AUTOMATION AND EMERGENCY SYSTEMS.

from **10 kW** ————— to **4.8 MW**



3-PHASE UPS & STS

B8031FXS
3/1-Phase UPS
from 10 to 20 kVA

B8033FXS
3/3-Phase UPS
from 10 to 20 kVA

Ingenio Plus
3-Phase UPS
from 30 to 160 kW

Ingenio MAX
3-Phase UPS
from 200 to 600 kW

Borri provides facility managers with resilient critical power solutions across all their applications whether they be health care centres or manufacturing facilities.



**INDUSTRIAL CONTROLS
AND PROCESS AUTOMATION**



MEDICAL EQUIPMENT



BUILDING AUTOMATION



EMERGENCY AND SAFETY SYSTEMS



B9000FXS

Transformer 3-Phase UPS
from 60 to 300 kVA

B9600FXS

Transformer 3-Phase UPS
from 400 to 800 kVA

NEW

STS 300

3-Phase Static Transfer Switches
from 100 to 2000 A



ECS – EMERGENCY CENTRAL SYSTEMS

E8000 ECS

3/1 - 3/3 - Phase ECS
from 10 to 20 kVA

INGENIO ECS

3-Phase ECS
from 30 to 160 kVA

1-PHASE UPS

from **1000 VA** ————— to **10 kVA**





Applications



Home office



Computers
& Peripherals



Network
& Server



Small
data centre

User-friendly

Easy installation
and setup for immediate
use.

Intuitive LCD display

Providing easy-to-read
UPS status and power
information.

Convertible design

Rack/Tower UPS's can be
used in both tower and rack
configurations.

Borri 1-phase UPS's Giotto, Galileo Plus, Leonardo and Leonardo Plus have been designed to prevent power interferences and to keep your small and medium equipment running.

GIOTTO

from 1000 VA — to 2000 VA

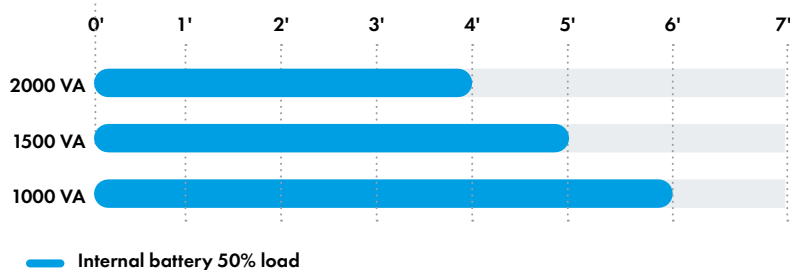


Line interactive 1-Phase UPS
ideal for home and small office,
computers and peripherals.

Features and benefits

- User-friendly UPS ensuring compact protection for a wide range of needs with four output receptacles (IEC 320-C13) and one Schuko for high performance PC and peripherals.
- Instantaneous battery back-up power and electrical interference protection.
- Plug and Play installation easy to set up also for first-time users.
- Compact and noise-free running to be placed anywhere at home or office.
- Energy efficient ensuring lowest impact on energy costs.
- Intuitive LCD display provides easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Easy User-replaceable battery.
- AVR technology stabilizing output voltage to protect your electronics over a wide range of mains quality issues.
- Advanced battery management extending battery life.
- Internet Modem / LAN protection via RJ-11/45 plug.
- USB communication port providing UPS management.
- Cold start for powering loads when mains are not available.
- User-friendly UPS management software free downloadable at www.borri.it/download (for more info see p.24/25).

Back up time with internal batteries



GIOTTO technical data

Rating (VA)	1000	1500	2000	
Nominal Power (W)	600	900	1200	
UPS dimensions WxDxH (mm)	148x315x198			
UPS weight (kg)	9	10,5	11.8	
Input				
Connection type	IEC 320-C14			
Nominal voltage	230 Vac 1-phase			
Voltage range	160 to 290 Vac			
Frequency and range	50/60 Hz, 45 to 65 Hz			
Output				
Connection type	4 IEC 320-C13 and 1 Schuko			
Nominal voltage	230 Vac 1-phase			
Frequency	50/60 Hz			
Wave form	Simulated sine wave			
Battery				
Autonomy time (min.) ◊	50% load	6	5	4
	100% load	3	3	2
Connectivity and function extensions				
Front panel	LCD, ON/OFF button			
Communication	Included: USB Compatible platforms: Windows, Linux, Mac			
Environmental				
Operating temperature range	0°C to +40°C			
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m			
Audible noise at 1 m (dBA)	< 40			
Standards and certifications				
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001			
Safety	IEC/EN 62040-1			
EMC	IEC/EN 62040-2			
Marking	CE			

◊ Measurement conditions: optimised parameters, fully charged battery, 0.6 PF



GALILEO PLUS

from 1000 VA — to 3000 VA

On-line 1-Phase UPS with Rack/Tower convertible design
ideal for small and medium businesses, networks and servers.



Features and benefits

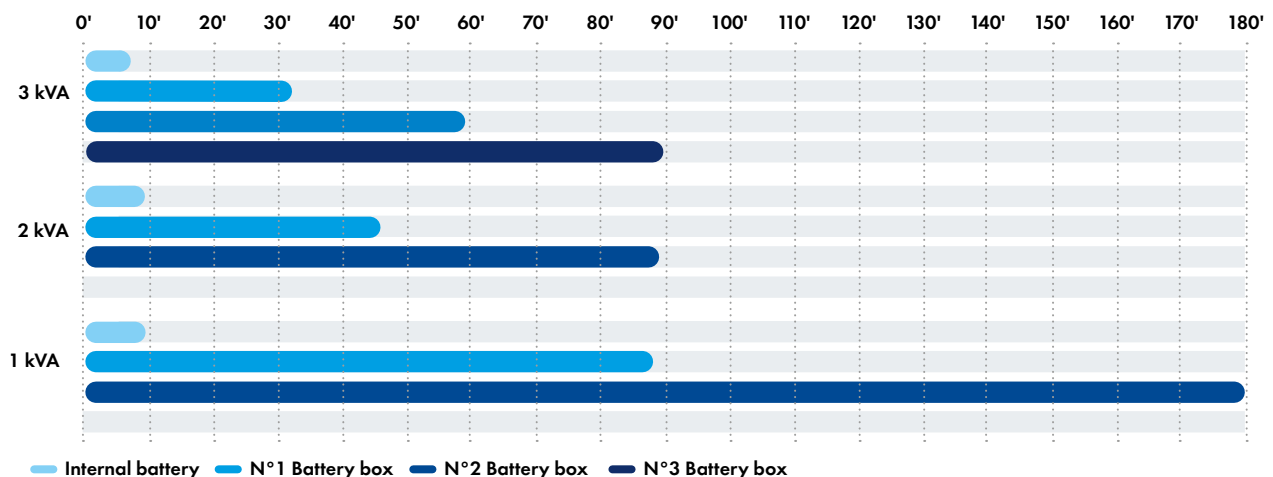
- On-line double conversion UPS from 1000 to 3000 VA.
- Rack/Tower convertible design with reversible screen to protect your investment when migrating from tower to rack-mount environment.
- Easy installation and set up, user-replaceable and upgradable battery.
- Intuitive reversible LCD display providing easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Smart cooling system ensuring further energy savings.
- Active harmonic power quality control ensuring up to 0.99 input PF and THDi<3% for maximum compatibility with sources.
- Automatic self test and advanced battery management maximizing battery performance and extending battery life.
- Remote power off for immediate UPS shutdown in case of emergency.
- USB communication port providing UPS management.
- One slot auto-sensing communication cards.
- Cold start for powering loads when mains are not available.
- User-friendly UPS management software with alerts upon main power failures and system shutdown notification via SMS and email, free downloadable at www.borri.it/download (for more info see p.24/25).

Main options

- SNMP card to send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol to monitor UPS status by any internet browser from workstations and to receive SMS or e-mail alerts from the UPS on any portable device.
- Contact relay card to send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts.
- Battery extension box allowing additional autonomy time to be quickly added.
- Additional battery charger for external battery box.
- Rail kit Rack/Tower.
- External manual bypass.



Back up time for Rack/Tower UPS



GALILEO PLUS technical data

Rating (VA)	1000*	2000*	3000*	
Nominal Power (W)	900	1800	2700	
UPS dimensions WxDxH (mm)	(2U) 88x405x440	(2U) 88x600x440		
Battery cabinet dimensions WxDxH (mm)	(4U) 176x405x440	(2U) 88x600x440		
UPS weight (kg)	16	29.5	30	
Input				
Connection type	IEC 320-C14		IEC 320-C20	
Nominal voltage	230 Vac 1-phase			
Voltage range	180-300 Vac at full load			
Frequency and range	50/60 Hz, 45 to 65 Hz			
Power factor	0.99			
Current distortion (THDi)	<3%			
Output				
Connection type	6 IEC C13		6 IEC C13 + 1 IEC C19	
Nominal voltage	230 Vac +/-1% 1-phase			
Frequency	50/60 Hz			
Power factor	0.9			
Overload capability	105% continuous, 120% for 30 s, 150% for 10 s			
Mode of operation	On-line, Eco mode			
Classification by IEC/EN 62040-3	VFI-SS-11			
Battery				
Autonomy time internal battery (min.)	50% load	15	16	12
	100% load	5	5	4
Connectivity and function extensions				
Front panel	Display LCD, status LED, function keys			
Communication	Included: USB, EPO, RS232. Optional: dry contact card, SNMP card. Compatible platforms: Windows, Linux			
Environmental				
Operating temperature range	0°C to +40°C			
Altitude (AMSL)	<1000 m without power reduction, >1000 m with reduction of 1% per 100 m			
Audible noise at 1 m (dBA)	<50			
Standards and certifications				
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001			
Safety	IEC/EN 62040-1			
EMC	IEC/EN 62040-2			
Test and performance	IEC/EN 62040-3			
Marking	CE			

*Rack/Tower



GALILEO PLUS RACK 1 kVA



GALILEO PLUS RACK 2 kVA



GALILEO PLUS RACK 3 kVA

GALILEO PLUS TOWER 2-3 kVA
and battery box

LEONARDO

from 6 kVA — to 10 kVA



High-power on-line

1-phase UPS with Tower design,
ideal for networks and servers,
small data centres.

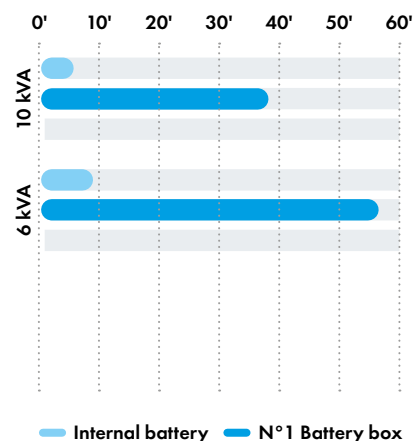
Features and benefits

- On-line double conversion UPS from 6 to 10 kVA, with Tower design.
- Parallel redundant configuration maximizing the availability.
- Easy installation and set up, user replaceable and upgradable battery.
- Intuitive LCD display providing easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Smart cooling system ensuring further energy savings.
- Active harmonic power quality control ensuring 0.99 input PF and THDi<3% for maximum compatibility with sources.
- Automatic self test and advanced battery management maximizing battery performance and extending battery life.
- Remote emergency power off to guarantee your piece of mind in critical applications.
- Internal manual bypass for safe and easy maintenance.
- RS232 communication port providing UPS management.
- Two slots auto-sensing communication cards.
- Cold start for powering loads when mains are not available.
- Borri Power Guardian user-friendly UPS management software with alerts upon main power failures and system shutdown notification via SMS and email, free downloadable at www.borri.it/download (for more info see p.24/25).

Main options

- SNMP card to send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol to monitor UPS status by any internet browser from workstations and to receive SMS or e-mail alerts from the UPS on any portable device.
- Contact relay card to send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts.
- Battery extension box allowing additional autonomy time to be quickly added.
- Additional battery charger for external battery box.
- Parallel kit.
- Rack PDU with external sockets and manual bypass switch.

Back up time for Tower UPS



LEONARDO technical data

Rating (kVA)	6*		10*	
Nominal Power (kW)	5.4		9	
UPS dimensions WxDxH (mm)	290x645x748		290x645x748	
UPS weight (kg)	86		96	
Input				
Connection type	Hardwired 2w (rectifier), 2w (bypass)			
Nominal voltage	230 Vac 1-phase			
Voltage range	160 to 280 Vac			
Frequency and range	50/60 Hz, 45 to 65 Hz			
Power factor	0.99			
Current distortion (THDi)	<6%			
Output				
Connection type	Hardwired 2w			
Nominal voltage	230 Vac +/-1% 1-phase			
Frequency	50/60 Hz			
Power factor	Up to 0.9, without power derating			
Overload capability	104% continuous, 150% for 160 seconds, >150% transfer to bypass			
Mode of operation	On-line, Eco mode			
Classification by IEC/EN 62040-3	VFI-SS-11			
Battery				
Autonomy time internal battery (min.)	50% load	25	17	
	100% load	9	6	
Connectivity and function extensions				
Front panel	Display LCD, status LED, function keys			
Communication	Included: USB, RS232 card, EPO. Optional: dry contact card, SNMP card, RS485 card. Compatible platforms: Windows, Linux, Mac			
Environmental				
Operating temperature range	0°C to +40°C			
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m			
Audible noise at 1 m (dBA)	< 50			
Standards and certifications				
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001			
Safety	IEC/EN 62040-1			
EMC	IEC/EN 62040-2			
Marking	CE			

*Tower with internal battery



LEONARDO TOWER 6/10 kVA



LCD DISPLAY providing UPS information, including battery charge level, backup time and system status.

LEONARDO PLUS

from 6 kVA — to 10 kVA



Features and benefits

- On-line double conversion UPS from 6 to 10 kVA Rack/Tower.
- Rack/Tower convertible design with reversible screen to protect your investment when migrating from tower to rack-mount environment. Both UPS and display panel can be rotated.
- Easy installation and set up, user-replaceable and upgradable battery.

- Intuitive reversible LCD display providing easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Smart cooling system ensuring further energy savings.
- Active harmonic power quality control ensuring up to 0.99 input PF and THDi<3% for maximum compatibility with sources.
- Automatic self test and advanced battery management maximizing battery performance and extending battery life.

High-power on-line
1-phase UPS with Rack/Tower convertible design, ideal for servers, networks and small data centres.

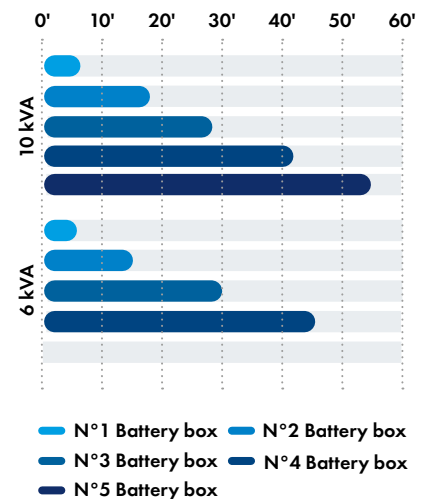
- Remote power off for immediate UPS shutdown in case of emergency.
- USB communication port providing UPS management.
- One slot auto-sensing communication cards.
- Cold start for powering loads when mains are not available.
- User-friendly UPS management software with alerts upon main power failures and system shutdown notification via SMS and email, free downloadable at www.borri.it/download (for more info see p.24/25).



Main options

- SNMP card to send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol to monitor UPS status by any internet browser from workstations and to receive SMS or e-mail alerts from the UPS on any portable device.
- Contact relay card to send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts.
- Battery extension box allowing additional autonomy time to be quickly added.
- Additional battery charger for external battery box.
- Rail kit Rack/Tower.
- External manual bypass.

Back up time for Rack/Tower UPS



LEONARDO PLUS technical data

Rating (VA)	6000*	6000**	10000**	
Nominal Power (W)	6000	6000	10000	
UPS dimensions WxDxH (mm)	(4U) 176x680x440	(2U) 88x680x440	(3U) 132x680x440	
Battery cabinet dimensions WxDxH (mm)	-	(2U) 88x680x44	(3U) 132x680x440	
UPS weight (kg)	60	25	26	
Input				
Connection type	Hardwired 2w		Hardwired 3w (rectifier, bypass, neutral)	
Nominal voltage	230 Vac 1-phase			
Voltage range	170-288 Vac at full load			
Frequency and range	50/60 Hz, 45 to 65 Hz			
Power factor	0.99			
Current distortion (THDi)	<3%			
Output				
Connection type	Hardwired 2w 8 IEC C13, 2 IEC C19	Hardwired 2w		
Nominal voltage	230 Vac +/-1% 1-phase			
Frequency	50/60 Hz			
Power factor	1			
Overload capability	105% continuous, 120% for 30 s, 150% for 160 ms			
Mode of operation	On-line, Eco mode			
Classification by IEC/EN 62040-3	VFI-SS-11			
Battery				
Autonomy time internal battery (min.)	50% load	8	External battery	External battery
	100% load	5	External battery	External battery
Connectivity and function extensions				
Front panel	Display LCD, status LED, function keys			
Communication	Included: USB, EPO, RS232. Optional: dry contact card, SNMP card, Modbus protocol Compatible platforms: Windows, Linux			
Environmental				
Operating temperature range	0°C to +40°C			
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 1% per 100 m			
Audible noise at 1 m (dBA)	< 50			
Standards and certifications				
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001			
Safety	IEC/EN 62040-1			
EMC	IEC/EN 62040-2			
Test and performance	IEC/EN 62040-3			
Marking	CE			

*Rack/Tower with internal battery **Rack/Tower without internal battery



LEONARDO PLUS RACK 6 kVA
w/o internal battery



LEONARDO PLUS RACK 6 kVA

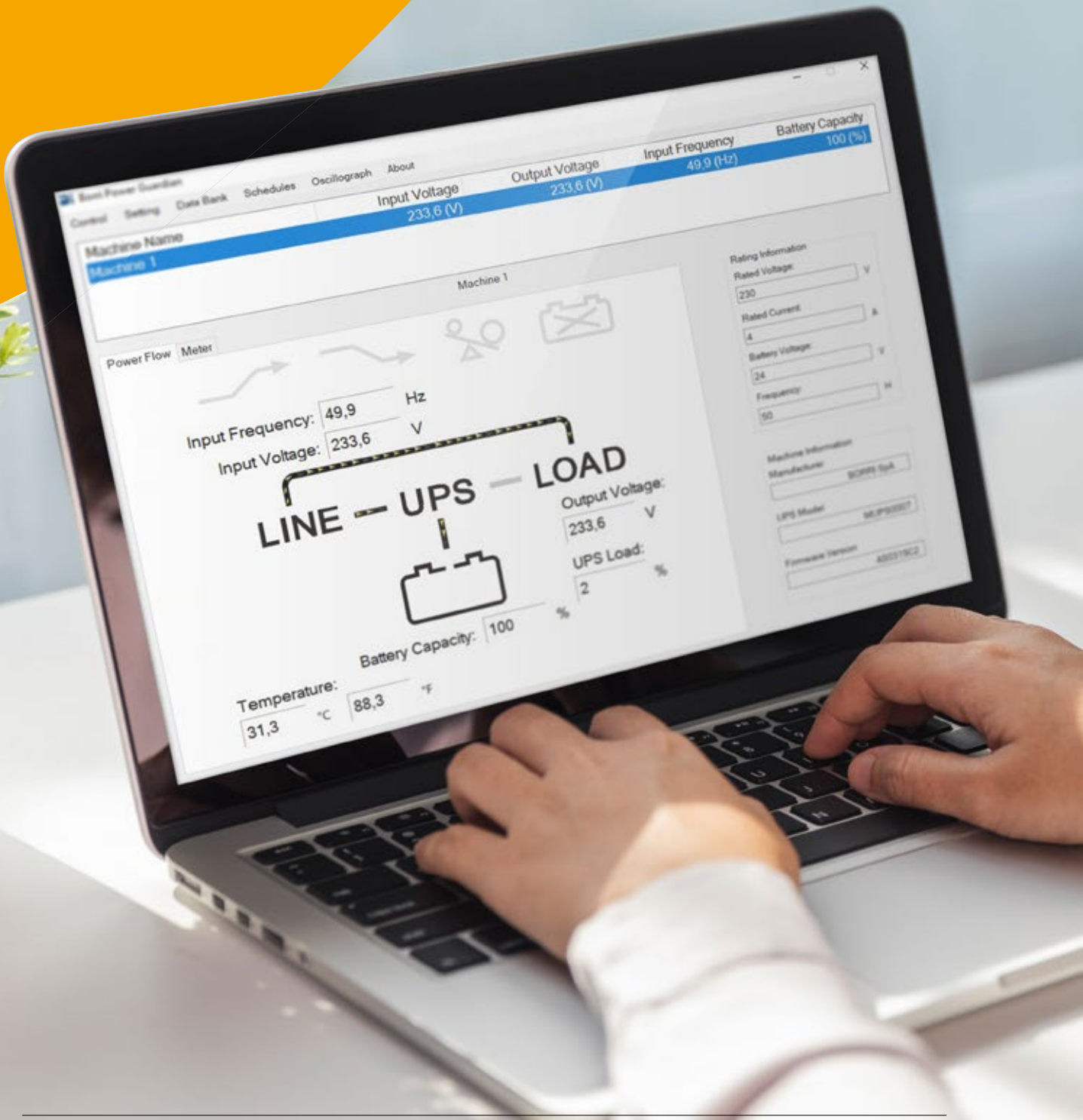


LEONARDO PLUS RACK 10 kVA



LEONARDO PLUS TOWER 10 kVA
and battery box

1-PH UPS MONITORING SOFTWARE



Free user-friendly UPS software, providing monitoring of the UPS status and automatic safe system shutdown during power outages.



Features and benefits

- Fast, easy installation and configuration via USB or RS232 even for first-time users.
- Automatic orderly application and system shutdown.
- Preventing potential data corruption and hardware damage.
- Alerts on main power failures and system shutdowns notification via SMS and email.
- Automatic self-test of UPS and battery status ensuring early detection of anomalies.
- UPS parameters and power status at a glance. It summarizes graphically and numerically power problems such as blackouts or electrical noise over time and UPS information such as input and output voltage, frequency, temperature, loads and battery capacity.
- Customised settings for tailor-made solutions.



Download Borri free software at www.borri.it/download

UPS 3/1-PHASE and 3/3-PHASE

B8031FXS B8033FXS

from 10 kVA ———— to 20 kVA



Applications



Network
& Server



Industrial
controls & process
automation



Medical
equipment



Building
automation

Robust and compact

Full IGBT technology providing smooth sinusoidal input current cuts all upstream oversizing costs.

Low running costs

High efficiency and ECO mode reduce overall power losses and thus energy costs.

Easy to install and maintain

Removable power modules and simple handling for low installation and mean time to repair.

Robust, customisable and easy-to-maintain UPS, available as either 3-phase in/1-phase out or 3-phase in/3-phase out. B8031 FXS and B8033 FXS series is suitable for server rooms, IT equipment, industrial controls, medical equipment and process automation.

B8031FXS - B8033FXS: featuring extremely small dimensions and one of the smallest footprint in its range.

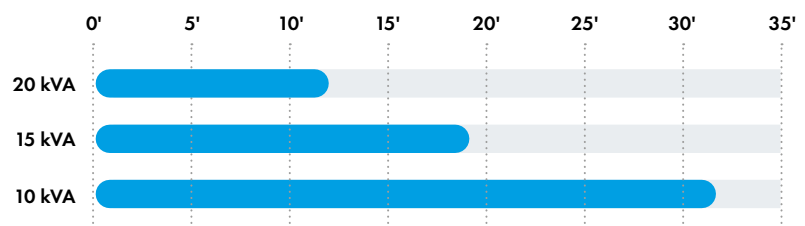


Features and benefits

- High double conversion efficiency and ECO mode for low running costs and environmental impact.
- Transformer free design for light small size layout.
- Removable power modules architecture and built-in diagnostics for easy maintenance and very low MTTR.
- Hot connection/disconnection of parallel units for easy system resizing.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and low THDi for maximum upstream sources compatibility.
- Wide range of configurations with internal batteries for low TCO compact solutions.
- High power battery charger, suiting long autonomy applications.
- Dual DSP plus microcontroller logics for top performance and reliability.
- CAN-bus based distributed parallel control ensuring high load sharing accuracy and no single point of failure.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Included bypass contactor for complete backfeed protection and operators' safety without additional installation costs.
- 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.
- Battery fuse switch wall-mounted box.
- Associated battery cabinets for long autonomy times.
- Parallel redundant up to 6 units for system redundancy
- Load-sync option.
- Input terminals for remote EPO, external manual bypass auxiliary contact, diesel mode.
- Separate bypass input for B8033FXS.

B8031 FXS - B8033 FXS technical data

Rating (kVA)	10	15	20
Nominal Power (kW)	9	13.5	18
UPS dimensions WxDxH (mm)	450x640x1200		
UPS weight (kg)	100	110	110
UPS weight with internal battery (kg)	247	257	257
External battery module dimensions WxDxH (mm)	500x640x1200		
Battery configuration	Internal or external, 360 to 372 cells, VRLA (other options)		
Max autonomy with int. battery 70% load (min)	32	19	12
Input	B8031 FXS (10-15-20 kVA)		B8033 FXS (10-15-20 kVA)
Connection type	Hardwired 4w (rectifier), 2w (bypass)		Hardwired 4w
Nominal voltage	400 Vac 3-phase with neutral (rectifier) 220/230/240 Vac 1-phase (bypass)		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)	<4%		
Output	B8031 FXS (10-15-20 kVA)		B8033 FXS (10-15-20 kVA)
Connection type	Hardwired 2w		Hardwired 4w
Nominal voltage	220/230/240 Vac 1-phase		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	Inverter: 125% for 10 min, 150% for 30 s ; Bypass: 150% continuous, 1000% for 1 cycle		
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 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, load-sync; other options on request		
System			
Protection degree	IP 20		
Colour	RAL 7016		
Installation layout	10 cm wall-gap, side by side installation allowed		
Accessibility	Front and top access, bottom cable entry		

* according to IEC/EN 62040-3

Other features

Environmental	
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
Standards and certifications	
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

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.

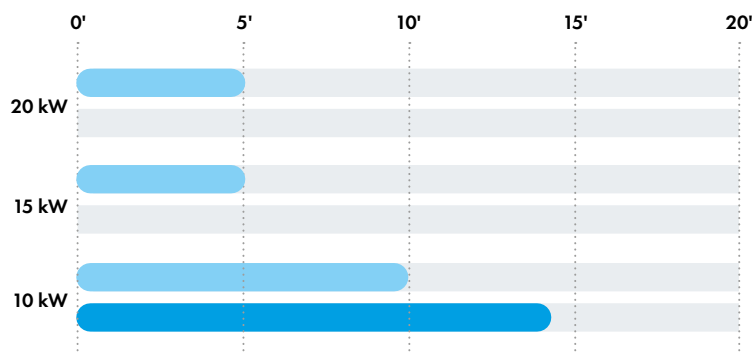
Ingenio Compact: transformer free, high efficiency, compact and easy to install and use.



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	
Input			
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%		
Output			
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		
Connectivity and function extensions			
Front panel	Touch screen display		
Remote communication	Included: serial RS232; backfeed protection monitoring contact, remote EPO contact. Optional: 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		
System			
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

Environmental	
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
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

UPS 3-PHASE

INGENIO PLUS

from **30 kW** ————— to **160 kW**





Applications



Small data centre



Medium data centre



Network & Server



Industrial controls & process automation



Medical equipment



Building automation

Power factor 1

No costs related to electrical infrastructure oversizing and power factor correction.

Compact footprint

Efficient compact UPS with transformer free design.

Continuous savings

Patented Green Conversion technology provides high efficiency and extended life on UPS critical components and batteries.

The ideal power protection solutions for a range of critical applications, including networking and small to medium data centres, health, finance, industrial processing, building and transportation. Featuring Green Conversion patented technology, Ingenio Plus provides high efficiency even at light loads.

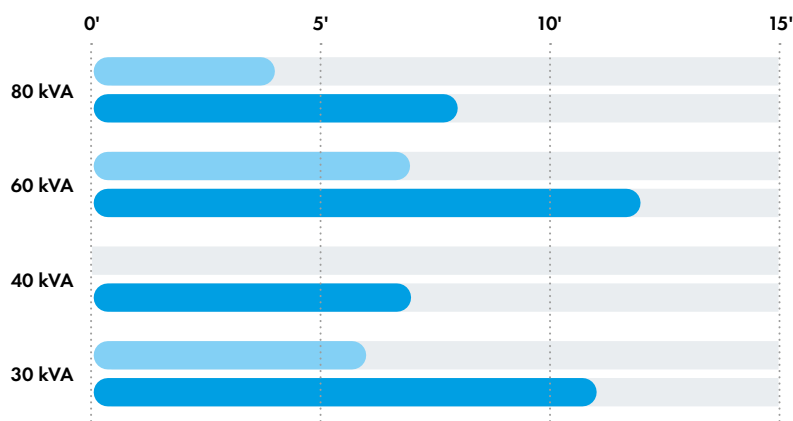
Ingenio Plus: compact and very high efficient solution perfect for supplying reliable uninterrupted quality power to all critical applications.



Features and benefits

- Green Conversion technology, high efficiency even at light load and the lowest TCO in its category.
- Full rated output power (pf=1), ensuring optimal UPS sizing and utilization.
- Transformer free design for compact, light and sustainable systems.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and THDi<3% for maximum upstream sources compatibility.
- Internal battery configurations up to 80 kVA for less floor space and maximum flexibility.
- 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.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with all international product standards for maximum quality guarantee.
- Backfeed protection contact.
- Lithium Battery compatible on selected models.

Back up time with internal batteries



*Optional touch screen display (on 60-160 kW UPS)

Main options

- Isolation transformer.
- 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 redundant up to 6 units for system redundancy (other configurations on request).
- Load-sync option.
- Common battery (on 60-160 kVA range).
- Backfeed protection trip coil.
- Separate rectifier and bypass input for INGENIO PLUS 30-40 kVA.
- Colour touch screen 7" display on 60-160 kVA UPS (*)

INGENIO PLUS technical data

Rating (kVA)	30	40	60	80	100	125	160
Nominal Power (kW)	30	40	60	80	100	125	160
UPS dimensions WxDxH (mm)	465x650x1230		560x940x1500		560x940x1800		
UPS weight (kg)	120	140	190	215	320	360	380
UPS weight with internal battery (kg)	365	385	770	785	-	-	-
Battery configuration	Internal or external, 360 to 372 cells, VRLA (other options)				External 360 to 372 cells, VRLA (other options)		
Max autonomy with int. battery 70% load (min)	11	7	12	8	-	-	-

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*	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

Connectivity and function extensions

Front panel	Graphic display, mimic LED panel and keyboard, local EPO
Remote communication	Included:(30 to 160 kVA): backfeed protection monitoring contact. Included (60 to 160 kVA): 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.). 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 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, load-sync; 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, 80 cm side clearance (with internal battery)	
Accessibility	Front and top access, bottom cable entry	Front and top access, side access (with internal battery) bottom cable entry	Front access, side access (with internal battery) bottom cable entry

*conditions apply **according to IEC/EN 62040-3

Other features**Environmental**

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)	< 60

Standards and certifications

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

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.

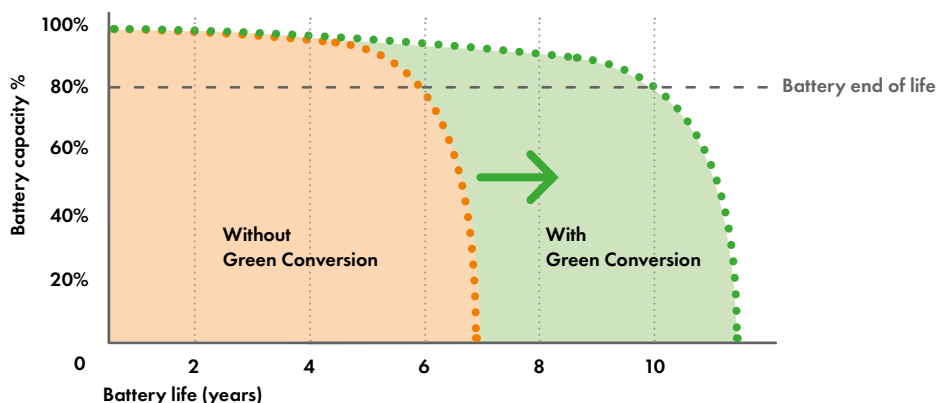
Ingenio Max: highest online efficiency in its class for a wide range of high power critical applications.



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 on selected models.
- Product Environmental Profile declaration (PEP) available for sustainability assessment.

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 6 units for system redundancy (other configurations on request).
- Load-sync option.
- Common battery on selected models.
- Backfeed protection trip coil.
- Solutions for peak shaving

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	630	675	1080	1150	1400
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: 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					
Connectivity and function extensions						
Front panel	10" colour touch screen display, 1024x600 pixels					
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., external output circuit breaker aux. cont., remote transfer to bypass mode). 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	Efficiency enhancement kit; common battery; isolation transformer; transformers/autotransformers for voltage adjustment, external maintenance bypass; battery fuse switch box; custom battery cabinets; battery thermal probe; parallel kit; load-sync; top cable entry; backfeed tripping coil for bypass disconnecter; other options on request					
System						
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

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)	< 65		< 72		< 80	
Standards and certifications						
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					

UPS 3-PHASE

B9000FXS

from **60 kVA** ——— to **300 kVA**

Applications



Small
data centre



Medium
data centre



Network
& Server



Industrial
controls & process
automation



Medical
equipment



Building
automation

Rugged design and high reliability

Customisable UPS for
specific process industry
applications.

Minimum maintenance costs

Full front accessibility to
all components and high
material quality extremely
reduce servicing.

Transformer based design

Reliable design with output
isolation transformer for
DC/AC galvanic protection.

Transformer-based UPS designed for safety and emergency systems, process control devices and machine tooling, critical infrastructures, medical equipment, small and medium data centres monolithic power protection.

B9000FXS: reliable, rugged transformer based power solution.

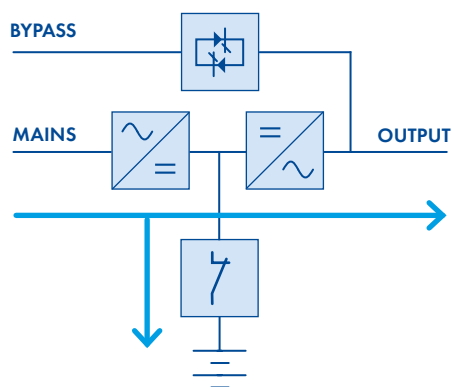


Features and benefits

- Built-in inverter transformer for DC/AC galvanic protection of industrial type loads.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and THDi<3% for maximum upstream sources compatibility.
- Front access to all critical components for easy maintenance.
- Hot connection/disconnection of parallel units for easy system resizing.
- Accurate battery management providing ripple current minimization charge current/voltage control as per batteries manufacturers' specifications and automatic/manual battery test for maximum battery expected life preservation.
- Dynamic Charging Mode (DCM) for maximum versatility in long autonomy and low charging time applications.
- Smart parallel management in load sharing, load synchronization of single UPS systems and load synchronization of two paralleled systems for optimum protection.
- Dual DSP plus microcontroller logics for top performance and reliability.
- CAN-bus based distributed parallel control ensuring high load sharing accuracy and no single point of failure in parallel systems.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with all international product standards for maximum quality guarantee.

Dynamic Charging Mode (DCM)

The battery charging current can be set above the nominal, up to the DCM limit, in order to manage high capacity battery packs. The extra charging power is fed to the battery, as long as the load does not requires it. This is a firmware enabled feature.



Main options

- Backfeed protection bypass contactor.
- Bypass isolation transformer.
- Transformers/autotransformers for voltage adjustment.
- Battery voltage temperature compensation.
- External maintenance bypass wall-mounted box.
- Battery fuse switch wall-mounted box.
- Associated battery cabinets for long autonomy times.
- Parallel redundant up to 6 units or system redundancy.
- Load-sync option.
- Top cable entry.

B9000FXS technical data

Rating (kVA)	60	80	100	125	160	200	250	300
Nominal Power (kW)	54	72	90	112.5	144	180	225	270
Dimensions WxDxH (mm)	815x825x1670					1217x853x1900		
UPS weight (kg)	570	600	625	660	715	970	1090	1170
Battery configuration	External, 300 to 312 cells, VRLA (other options)							
Input								
Connection type	Hardwired 3w (rectifier), 4w (bypass)							
Nominal voltage	400 Vac 3-phase (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 0.9, without power derating							
Overload capacity	Inverter: 125% for 10 min, 150% for 1 min, 199% for 10 s; bypass: 150% continuous, 1000% for 1 cycle							
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; input terminal block for: remote emergency power off (REPO), battery circuit breaker aux. cont., external maintenance bypass circuit breaker aux. cont., diesel mode aux. contact. Optional: SNMP adapter (Ethernet), Web interface (Ethernet), ModBus-TCP/IP (Ethernet); ModBus-RTU (RS485); ModBus-RTU to PROFIBUS DP adapter; SPDT contact relay board; remote system monitoring panel; UPS managing and server shutdown software							
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, top cable entry; load-sync; backfeed protection; other options on request							
System								
Protection degree	IP 20 (other options)							
Colour	RAL 7016 (other options)							
Installation layout	Wall, back to back and side by side installation allowed							
Accessibility	Front and top access, bottom cable entry							

* according to 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)	< 62
Standards and certifications	
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

UPS 3-PHASE

B9600FXS

from **400** kVA ——— to **800** kVA



Applications



Medium
data centre



Network
& Server



Industrial
controls & process
automation



Medical
equipment



Building
automation

Rugged design and high reliability

Customisable UPS for
specific process industry
applications.

Transformer based design

Reliable design with output
isolation transformer for
DC/AC galvanic protection.

Minimum maintenance costs

Full front accessibility to
all components and high
material quality extremely
reduce servicing.

Transformer-based UPS designed for safety and emergency systems, process control devices and machine tooling, critical infrastructures, medical equipment, small and medium data centres monolithic power protection.

B9600FXS: reliable, high power transformer based power solution.



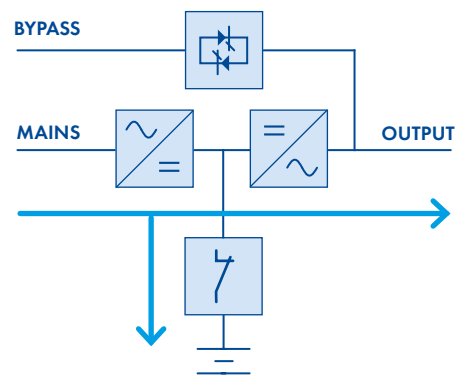
Features and benefits

- Built-in inverter transformer for DC/AC galvanic protection of industrial type loads.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and THDi<3% for maximum upstream sources compatibility.
- Front access to all critical components for easy maintenance.
- Included backfeed bypass contactor for complete protection and operators' safety without additional installation costs.
- Hot connection/disconnection of parallel units for easy system resizing.
- Accurate battery management providing ripple current minimization charge current/voltage control as per batteries manufacturers' specifications and automatic/manual battery test for maximum battery expected life preservation.
- Dynamic Charging Mode (DCM) for maximum versatility in long autonomy and low charging time applications.
- Smart parallel management in load sharing, load synchronization of single UPS systems and load synchronization of two paralleled systems for optimum protection.
- Dual DSP plus microcontroller logics for top performance and reliability.
- CAN-bus based distributed parallel control ensuring high load sharing accuracy and no single point of failure in parallel systems.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with all international product standards for maximum quality guarantee.



Dynamic Charging Mode (DCM)

The battery charging current can be set above the nominal, up to the DCM limit, in order to manage high capacity battery packs. The extra charging power is fed to the battery, as long as the load does not requires it. This is a firmware enabled feature.



Main options

- Manual bypass.
- Bypass isolation transformer.
- Transformers/autotransformers for voltage adjustment.
- Battery voltage temperature compensation.
- Battery fuse switch wall-mounted box.
- Associated battery cabinets for long autonomy times.
- Parallel redundant up to 6 units for system redundancy.
- Load-sync option.
- Top cable entry.

B9600FXS technical data

Rating (kVA)	400	500	600	800
Nominal Power (kW)	360	450	540	720
Dimensions WxDxH (mm)	1990x950x1920	2440x950x2020		3640x950x1920
UPS weight (kg)	1955	2482	2535	3600
Battery configuration	External, 300 to 312 cells, VRLA (other options)			
Input				
Connection type	Hardwired 3w (rectifier), 4w (bypass)			
Nominal voltage	400 Vac 3-phase (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 0.9, without power derating			
Overload capacity	Inverter: 125% for 10 min, 150% for 1 min, 199% for 10 s; bypass: 150% continuous, 1000% for 1 cycle			
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; input terminal block for: remote emergency power off (REPO), battery circuit breaker aux. cont., external maintenance bypass circuit breaker aux. cont., diesel mode aux. contact. Optional: SNMP adapter (Ethernet), Web interface (Ethernet), ModBus-TCP/IP (Ethernet); ModBus-RTU (RS485); ModBus-RTU to PROFIBUS DP adapter; SPDT contact relay board; remote system monitoring panel; UPS managing and server shutdown software			
Optional function extensions	Isolation transformer; transformers/autotransformers for voltage adjustment; maintenance bypass switch in extended cabinet or wall-mounted box; custom battery cabinets; wall-mounted battery fuse switch box; battery thermal probe; parallel kit; top cable entry; load-sync; other options on request			
System				
Protection degree	IP 20 (other options)			
Colour	RAL 7016 (other options)			
Installation layout	Wall, back to back and side by side installation allowed			
Accessibility	Front and top access, bottom cable entry			

* according to 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)	< 62
Standards and certifications	
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

MODULAR HI-POWER
3-PHASE UPS

UPSAVER 3VO

from **670 kW** ——— to **2.67 MW**



Applications



Large
data centre

High Efficiency

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

Modular hot swappable

Hot swappable and hot serviceable (VFI) modules ensuring lowest MTTR for highest overall availability.

3D Scalability

Up to 2.67 MW in a single unit, up to 21 MW in a parallel system and synchronized dual feed systems.

Borri 3rd Generation UPSaver 3vo high power modular UPS delivers unsurpassed performance for large and hyperscale data centres providing the highest level of availability for this power range, lowest power consumption and TCO.

UPSaver 3vo: designed for versatility and flexible power upgrade.



Main features

- Up to 97.2% online VFI efficiency* (certified by third party) and high efficiency operating modes.
- UPSaver 3vo operating modes providing best efficiency in all conditions: double conversion (VFI), ECO mode (VFD) and Ultra High Efficiency (VFD).
- Maximised efficiency and low TCO thanks to load matched output power adjustment.
- Hot scalable 333 kW power units with hot swap power packs thanks to optional distribution cabinets.
- Power parallel scalable up to 21 MW.
- High Genset compatibility thanks to minimum input capacitive power, unit input power factor, THDi <3% and programmable soft start features.
- Backfeed protection circuitry for maximum operator safety.
- Very small footprint.
- System design flexibility and total installation adaptability.
- Solutions for peak shaving.
- 10" colour touch screen display.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- VRLA and Li-Ion compatible.

*Conditions apply

Hot scalability & serviceability (on demand)

UPSaver 3vo can be configured with distribution sections including switches for rectifier, output and battery per each 333 kW modules. By this option, the unit can be upgraded and maintained while operating online VFI.

3-L Green Conversion Technology

Green Battery Management and Green Conversion technology save battery life, by mitigating the major root causes of battery ageing, such as ripple current and floating charge micro currents. UHE mode of operation dramatically increases the duration of wearing components.

Main options

- TNC/TNS grounding system.
- Dual/Single input.
- Top/Bottom entry line.
- Cable/Busbar connection.
- Centralized/Distributed battery.
- Various layouts.
- Hot Scalability.
- I/O Switches.



UPSAVER 3vo technical data

Rating (kVA/kW)	670	1000	1340	1670	2000	2340	2670
N of modules	2	3	4	5	6	7	8
UPS dimensions WxDxH (mm)*	3800x970x2150	4450x970x2150	6550x970x2150	7200x970x2150	7650x1200x2150	8800x1200x2150	(***)
UPS weight (kg)*	2140	2710	4205	4775	5770	6630	(***)
Battery configuration	External 360 to 372 cells, VRLA , Li-Ion (other options)						
Input							
Connection type	Hardwire 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: 105% continuous at 30°C, 125% for 10 min; 150% for 1 min; bypass: 110% continuous; 150% for 1 min; 700% for 100 ms; 1000% for 10 ms						
Efficiency (AC/AC)	Up to 99%						
Classification by IEC/EN 62040-3	VFI-SS-11						
Connectivity and function extensions							
Front panel	10" colour touch screen display, 1024x600 pixels						
Remote communication	Included: serial RS232; 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 by bypass mode); SPDT contact relay board; ModBus-RTU (RS485); Optional: ModBus-TCP/IP (Ethernet)						
Optional features	Isolation transformer; battery cabinets; DC protection cabinets; battery thermal probe; parallel kit; 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						
Accessibility	Front and top access, bottom and top cable entry						
Parallel configuration	Up to 8 UPS, for a total of 21 MW						

*Full option version including top busbar entry module, main switches, hot swap distribution modules **Conditions apply ***Contact our sales team for confirmation

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, ISO 14001, ISO 45001
Safety	IEC/EN 62040-1
EMC	IEC/EN 62040-2
Environment aspects	IEC/EN 62040-4; ISO 14025
Test and performance	IEC/EN 62040-3
Protection degree	IEC 60529
Marking	CE

EMERGENCY CENTRAL SYSTEMS 1- and 3-PHASE

ECS

from 10 kVA ——— to 160 kVA





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

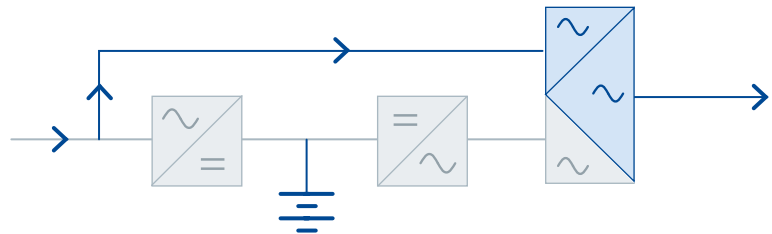


INGENIO ECS 100-160 kVA

Operating mode

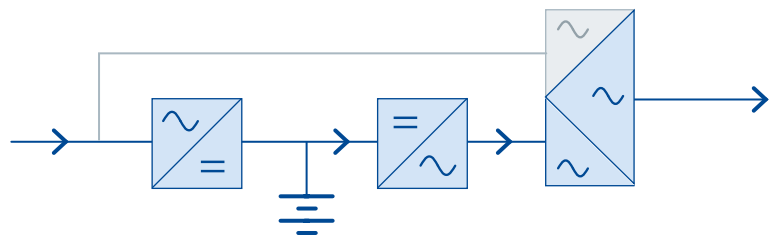
Changeover mode - Always On (AO)

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



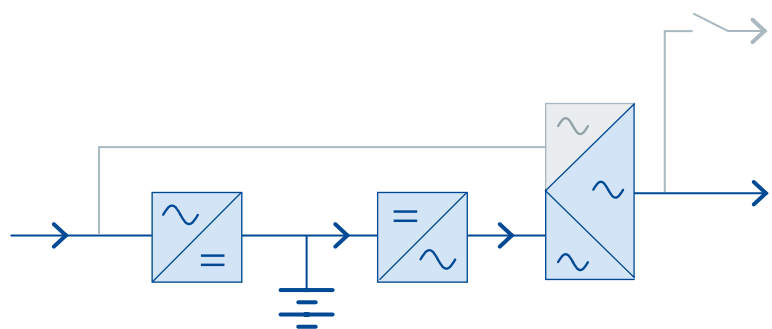
Mode without interruption - Always On (AO)

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		
Accessibility	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				
Accessibility	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

STATIC TRANSFER SWITCHES 1- and 3-PHASE

STS

from **16 A** ———— to **2000 A**





Applications



Network
& Server



Data centre



Industrial
controls & process
automation

Short circuit protection

Ensuring maximum source protection in dual feed applications.

No break seamless transfers

Automatically transferring loads to alternative power sources when the primary power source fails or is not available.

High availability

Thanks to source separation, dual maintenance bypass and redundant critical paths.

1-Phase and 3-Phase static transfer switches for seamless load transfer in dual path power systems. The STS rugged design and high reliability provides supply redundancy and prevents fault propagation.

1-PHASE STATIC TRANSFER SWITCHES

STS 16-32from **16 A** — to **32 A**

STS 16-32 front view



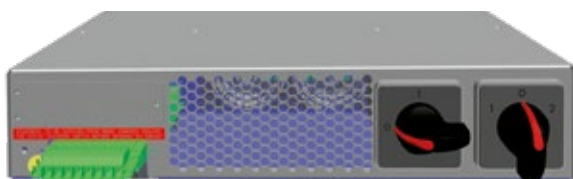
STS 16 rear view



STS 32 rear view

ITS maintenance switch main features

- 16 A and 32 A version.
- 6 x 40 A input terminal board.
- Zero switching time.



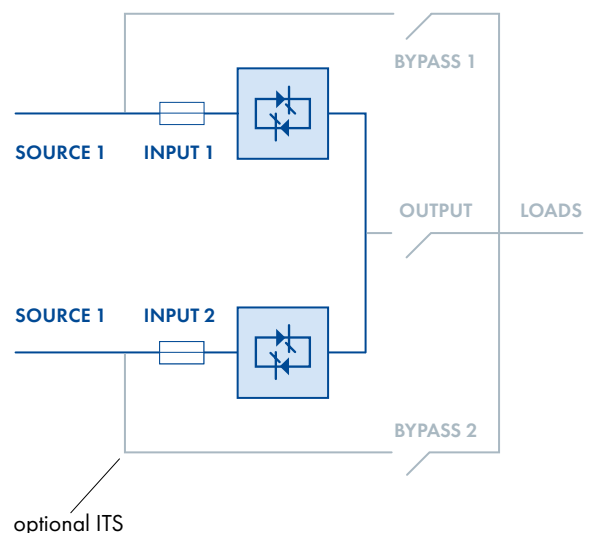
1-phase static transfer switch series designed to offer solutions for the protection of single-phase loads.

Features and benefits

- Dual redundant power supplies to control boards, for increased availability.
- Redundant cooling and fan failure monitoring, for reliable operation.
- Real-time SCR fault sensing, preventing fault propagation.
- High overload capability, for robust electrical design.
- ITS maintenance switch, for hot swap maintainability.
- Compact 19" rack system design, for easy integration.
- LCD/LED display, providing user friendly interface.
- Comprehensive set of communication options for total remote monitoring of equipment operation.

Main options

- ITS maintenance switch.
- RS485 ModBus interface.
- SNMP interface.

STS block diagram

STS 16 - STS 32 technical data

Model	STS 16	STS 32
Rating (A)	16	32
Dimensions WxDxH (mm)	440x275x88	
Weight (kg)	8	9
Input		
Connection type	Hardwired 5w	
Nominal voltage	200/208/220/230/240 Vac 1-phase	
Voltage tolerance	± 5% (up to ±20%)	
Absolute maximum voltage range	150 Vac to 300 Vac	
Frequency and range	50/60 Hz, ± 5% (up to ±20%)	
Source harmonic voltage content	Unlimited	
Transfer phase angle	5° to 20°	
Output		
Connection type	8 IEC-C 13, hardwired 3w	Hardwired 3w
Nominal voltage	200/208/220/230/240 Vac 1-phase	
Frequency	50/60 Hz	
Transfer time	2 to 6 ms	
Transfer mode	Break before make, transfer inhibit on fault	
Load power factor	1 to 0.3	
Maximum crest factor	3:1	
THD current feedback from load	Unlimited	
Overload capacity	125% for 1 min, 150% for 30 s, 200% for 5 s	
Efficiency (AC/AC)	99%	
Connectivity and function extensions		
Front panel	Graphical LCD display	
Remote communication	Included: RS-232 ModBus, USB, voltage free relay contacts; Optional: one slot for SNMP adapter or RS-485 ModBus adapter	
System		
Protection degree	IP 20	
Colour	RAL 9005	
Installation layout	Rack mounted	
Accessibility	Front and rear	

Other features

Environmental		
Operating temperature range	-5°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		
Quality assurance, environment, health and safety	ISO 9001, ISO 14001, ISO 45001	
Safety	IEC 60950-1	
EMC	EN 55022, EN 55024	
Transfer voltage limit	IEEE Standard 446	
Protection degree	IEC 60529	
Performance	IEC/EN 62310-3	
Marking	CE	

3-PHASE STATIC TRANSFER SWITCHES

STS 300

from **100 A** — to **2000 A**

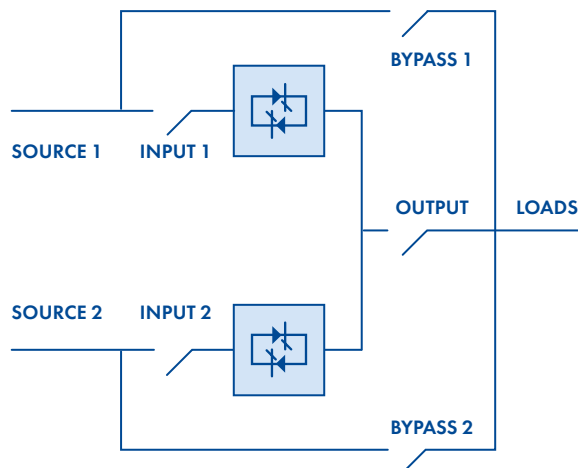
3-phase centralised static transfer switch series designed to offer solutions for the protection of loads even in critical environment.



Features and benefits

- Fuseless execution in 3- or 4-pole configuration for maximum flexibility.
 - Continuous monitoring of voltage and frequency and automatic instant (<4 ms) transfers for secure power switching without cross connection between sources.
 - ITIC/CBEMA compliant asynchronous transfers.
 - Overlapping neutral management, for safe switching in 4-pole applications.
 - Downstream inrush current management and short circuit transfer inhibit for robust load protection.
 - Open/shorted SCR fault detection and input moulded case switches with backfeed protection
- for maximum upstream safety.
 - Dual manual bypass for complete source independence during maintenance.
 - Dual redundant power supply, dual redundant control board and monitored fans for top product reliability in high availability applications.
 - Full front access for easy maintenance.
 - Configurable on demand for top, bottom cable entry or busbar entry for maximum installation versatility.
 - Comprehensive set of communication options.
 - Fully compliant with IEC product standards.

STS block diagram



Dry contact relay card (Included)

To send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts

Main options

- Triple redundant power supplies.
- Thyristor protection fuses.
- Isolation transformer.
- Output distribution panels.
- Additional SPDT contact relay board.
- SNMP, ModBus over TCP/IP card.
- Dual ModBus card.

RS485 ModBus-RTU port (Included)

To send UPS status to BMS's by RS485 connection and ModBus-RTU protocol. For remote monitoring and remote service

STS 300 technical data

Rating (A)*	100**	250**	400	630	800	1000***	1250	1600	1800	2000
Dimensions WxDxH (mm)	820x835x1475		811x980x2100	1211x980x2100		2011x980x2100		2311x980x2100	2511x980x2100	
Weight (kg)	265	290	305	615	660	700	820	1150	1280	1400

Input

Connection type	Hardwired 3w or 4w
Nominal voltage	380/400/415 Vac 3-phase ****
Voltage tolerance	From ±1% to ±20%, adjustable (default ±10%)
Frequency and range	50/60 Hz, from ±1% to ±10%, adjustable (default ±5%)
Source harmonic voltage content	Unlimited
Transfer phase angle	5° to 30°

Output

Connection type	3w or 4w
Nominal voltage	380/400/415 Vac 3-phase ****
Frequency	50/60 Hz
Transfer time	≤4 ms
Transfer mode	Break before make
Load power factor	1 to 0.3
Maximum crest factor	3:1
THD current feedback from load	Unlimited
Overload capacity	125% for 10 min, 150% for 1 min, 1000% for 10 cycles, 2000% for 1 cycle
Efficiency (AC/AC)	>99%

Connectivity and function extensions

Front panel	Graphical LCD display, mimic LED panel and keyboard
Remote communication	Included: dry contact relay card, RS232 and RS485 serial ports, ModBus-RTU protocol. Optional: additional dry contact relay card; SNMP, ModBus over TCP/IP card; dual ModBus card
Optional function extensions	Thyristor protection fuses; isolation transformer; output distribution panels; other options on request.

System

Protection degree	IP 20 (other options)
Colour	RAL 9005 (other options)
Installation layout	Wall, back to back and side by side installation allowed
Accessibility	Top or bottom cable; Top cable or busbar Top busbar

*rating up to 3000 A on request ** some features may not be available

*** Available with top or bottom cable entry, dimensions 1211x980x2100 mm (WxDxH) **** other on request

Other features

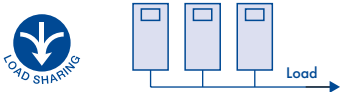
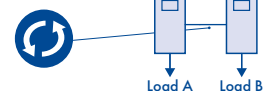
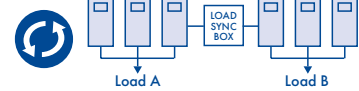




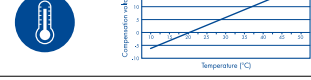
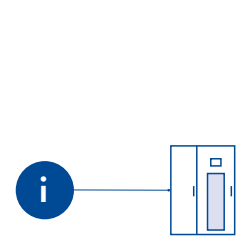




Environmental

Operating temperature range	0°C to +40°C
Storage temperature range	-10°C to +60°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, ISO 14001, ISO 45001
Safety	IEC/EN 62310-1
EMC	IEC/EN 62310-2
Breakers	IEC/EN60947-3
Transfer voltage limits	IEEE Standard 446
Protection degree	IEC 60529
Performance	IEC/EN 62310-3
Marking	CE

3-PHASE UPS'S OPTIONS

	Description	When do I use it
	PARALLEL KIT	When the unit is to be paralleled for load sharing
	LOAD SYNC FOR SINGLE UNITS	To synchronize single units' output for no-break load transfers by downstream static transfer switches
	LOAD SYNC BOX	To synchronize the output of two paralleled UPS systems for no-break load transfers by downstream static transfer switches
	BACKFEED INTERNAL TRIPPING DEVICE	To be fully protected against backfeed energy upon static bypass failure
	TOP CABLE ENTRY	To allow input and output cable entry from the top of the unit
	ISOLATION TRANSFORMER	To galvanically isolate UPS from load or to change system's earth arrangement
	BATTERY FUSED SWITCH BOX	To disconnect and protect an external battery pack
	BATTERY TEMPERATURE PROBE	For charging voltage compensation against temperature
	Input terminal block FOR REMOTE EPO	When the Emergency Power Off (EPO) has to be commanded by a remote control button
	Input terminal block FOR EXTERNAL MANUAL BYPASS SWITCH AUXILIARY CONTACT	When there is an external maintenance bypass switch, for state monitoring
	Input terminal block FOR EXTERNAL BATTERY SWITCH AUXILIARY CONTACT	When there is an external battery switch, for state monitoring
	Input terminal block FOR EXTERNAL OUTPUT CIRCUIT BREAKER	When there is an external output breaker, for status monitoring
	Input terminal block FOR REMOTE BYPASS TRANSFER	When the transfer to bypass mode can be commanded by an external contact
	Input terminal block FOR DIESEL MODE CONTACT	When battery recharge has to be inhibited over genset operation
	VOLT FREE CONTACT CARD	To send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts
	REMOTE MONITORING PANEL	To monitor UPS status by a LED panel from a remote control room (relay card required)
	RS485 MODBUS-RTU PORT	To send UPS status to BMS's by RS485 connection and ModBus-RTU protocol. For remote monitoring and remote service
	WEB/SNMP ADAPTER	To send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol. To monitor UPS status by any internet browser from workstations. To receive SMS or e-mail alerts from the UPS on any portable device

● Included ● Optional

	B8031FXS B8033FXS	Ingenio Compact	Ingenio Plus	Ingenio Max	B9000FXS	B9600FXS	UPSaver 3vo
	●	●	●	●	●	●	●
	●		●	●	●	●	●
			●	●	●	●	●
	Included contactor	Contactor (Included output contact for external tripping device)	Tripping coil (Included output contact for external tripping device)	Tripping coil (Included output contact for external tripping device)	Contactor	Included contactor	Tripping coil (Included output contact for external tripping device)
	Custom version only	Custom version only	Custom version only	●	●	●	Included on demand
	Input transformer, internal or extended cabinet. Output transformer for B8031FXS	Input transformer, extended cabinet	Input transformer, internal up to 80 kVA or extended cabinet	Input transformer, extended cabinet	Bypass transformer, extended cabinet	Bypass transformer, extended cabinet	Input transformer, extended cabinet
	●	●	●	●	●	●	●
	For internal or external battery	For internal or external battery	For internal up to 80 kVA or external battery	For external battery	For external battery	For external battery	For external battery
	●	●	● Included in 60-160 kVA	●	●	●	●
	●	●	● Included in 60-160 kVA	●	●	●	●
	●		●	●	●	●	●
			● Included in 60-160 kVA	●	●	●	●
			● Included in 60-160 kVA	●			●
	●		● Included in 60-160 kVA	●	●	●	●
	●	●	●	●	●	●	●
	●		●	●	●	●	●
	●	●	●	●	●	●	●
	●	●	●	●	●	●	●
	●	●	●	●	●	●	●

LI-ION BATTERY SOLUTIONS

FOR 3-PHASE UPS



To backup
critical applications

with reduced footprint, high
power density and to meet peak
shaving demand
for flexible energy management.

Applications



Medium
data centre



Large
data centre



Network
& Server



Industrial
controls & process
automation



Medical
equipment



Building
automation

Features and benefits

- Fully integrated with Borri 3-phase UPS range, for highest availability in most critical applications.*
- LiFePO₄ chemistry for safe, flexible and reliable backup solutions.
- Partial discharge capability, enhanced expected life and high rate of charge allowing maximum operational flexibility in smart grid applications.
- Extended operating temperature range, for reduced air conditioning needs and lower TCO.
- Internal cell balancing and passive equalization, ensuring safe and reliable operations.
- Embedded BMS management system to constantly check status health and performance of battery module, including protection MCCB.
- Comprehensive set of communication ports, including TCP/IP, RS485 ModBus and relay card, for total remote monitoring of battery operation.
- Color touch screen display for cell and system level supervision.

Technical data

Main Characteristics	
Chemistry	LiFePO ₄
Internal short circuit protection	Fast fuses + MCCB
Connection type	3w
Nominal voltage (V)	716.8
Max charging current (A)	1C
Expected life**	15 years
Temperature range	+20° C to +35° C
Standards	Cell safety: UL 1973 Module safety: IEC 62619 Transport: UN 38-3

* Ingenio Plus from 60kW – Ingenio MAX – UPSaver 3vo ** in standard conditions

POWER PROTECTION SOLUTIONS FOR HARSH INDUSTRIAL APPLICATIONS

from 5 kVA ——— to 2000 kVA



AC UPS

E2001
Industrial 1-Phase UPS
from 5 to 200 kVA

UMB AC
Industrial Modular UPS
from 10 to 320 kW

E3001
Industrial 3-Phase UPS
from 5 to 600 kVA

**OIL & GAS****POWER GENERATION
AND WATER TREATMENT****POWER TRANSMISSION
& DISTRIBUTION****TRANSPORTATION****CHEMICAL, MINING AND METALLURGY****PROCESS INDUSTRY**

IMB
Industrial 1-Phase Inverter
from 5 to 200 kVA

ITB
Industrial 3-Phase Inverter
from 5 to 600 kVA

Ingenio SFC
Static Frequency Converter
from 100 to 2000 kVA

**DC UPS**

RTB
Industrial 3-Phase Rectifier
24 V - 220 Vdc
from 50 to 2000 A

UMB DC
Industrial Modular Rectifier
from 24 V to 220 Vdc

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.

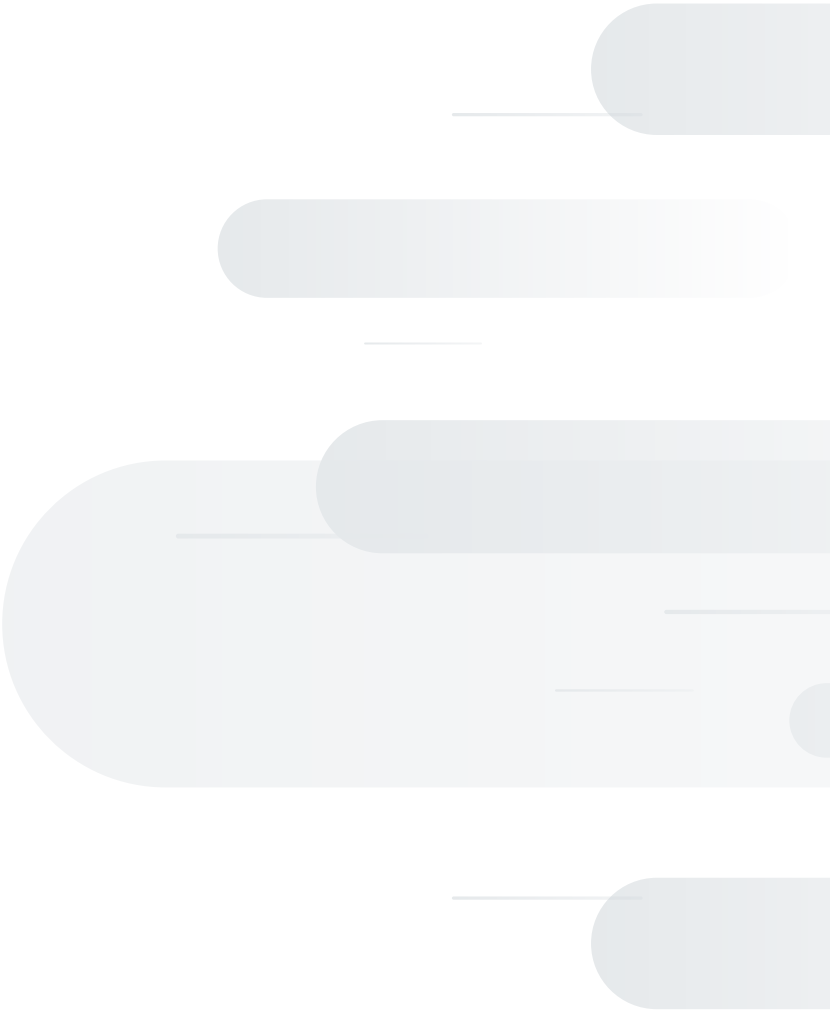


Training

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





www.borri.it

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