www.borri.it

UPS & CRITICAL POWER
CATALOGUE

English

UPS & CRITICAL POWER CATALOGUE

CONTENTS

YOUR CRITICAL POWER SOLUTION PARTNER.

The Borri Group has been developing and building uninterruptible power systems since 1932 and is a global provider of power electronics systems and solutions for harsh industrial and demanding critical power requirements.

— Borri's R&D vast expertise in all facets of firmware, power electronics and mechanical design provides innovative solutions for 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, Germany, UAE, India and Malaysia.

— It has also established a strong distributor network, able to deliver on site support and technical guidance indicative of our own capabilities.

Critical Power Solutions

Designing and building mission critical UPS's 1- and 3-Phase up to 21 MW.

Industrial Power Solutions

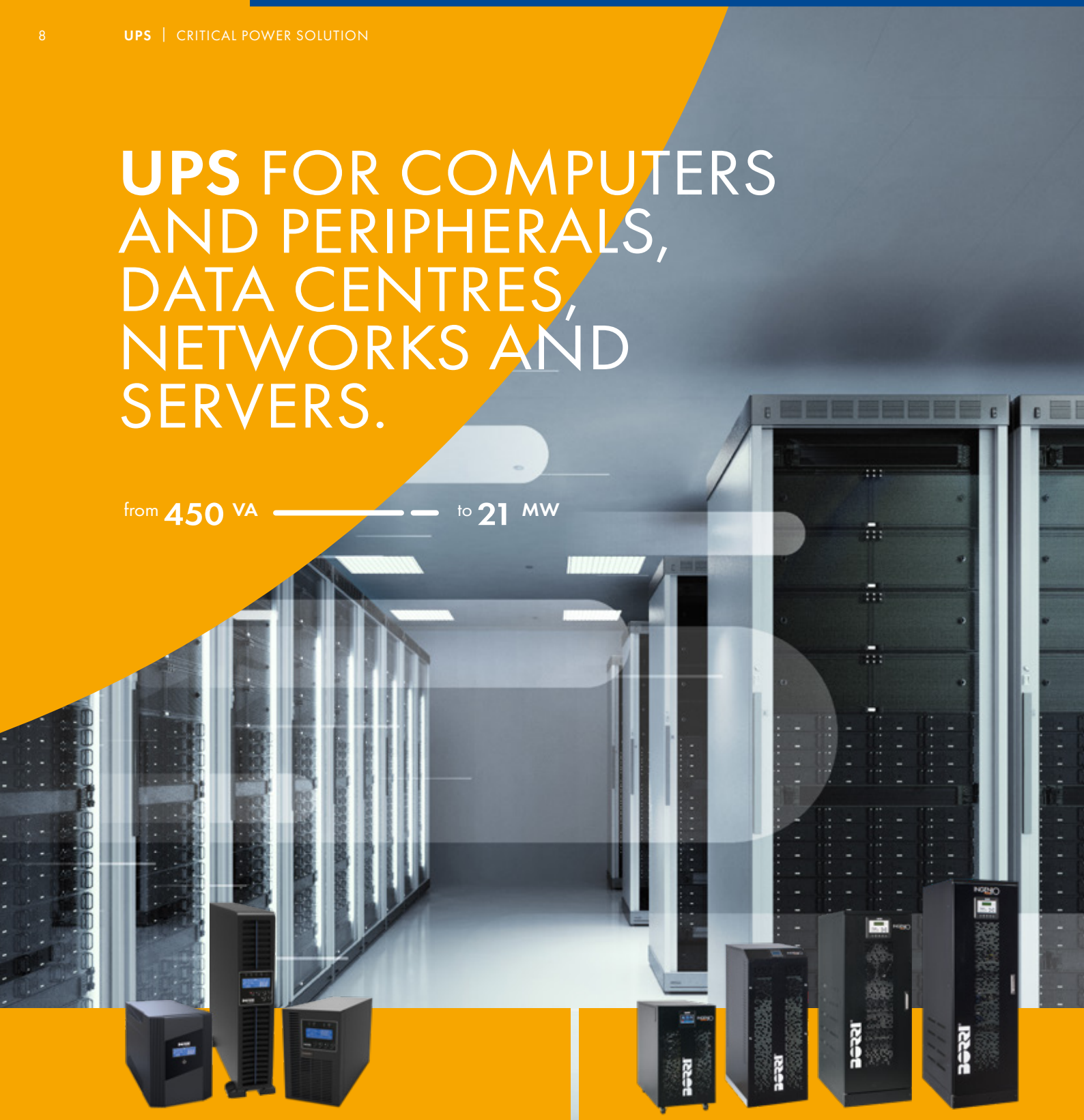
Designing, engineering and building customised AC and DC power supply systems for harsh industrial applications.

Service

Borri team of experts support you to the highest standards no matter where you are in the world.

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

from 450 VA —— to 21 MW



1-PHASE UPS & STS

Giotto
Line interactive 1-Phase UPS
from 450 to 2000 VA

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

Leonardo
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 kW

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 500 kW

STS 300
3-Phase Static Transfer Switches
from 100 to 3000 A

DATA CENTRE UPS'S AND SYSTEMS

Ingenio MAX XT
Scalable high-power UPS
from 750 kW to 2.1 MW

STS 300
3-Phase Static Transfer Switches
from 100 to 3000 A

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

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 500 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

Ingenio MAX XT
Scalable high-power UPS
from 750 kW to 2.1 MW

STS 300
3-Phase Static Transfer Switches
from 100 to 3000 A

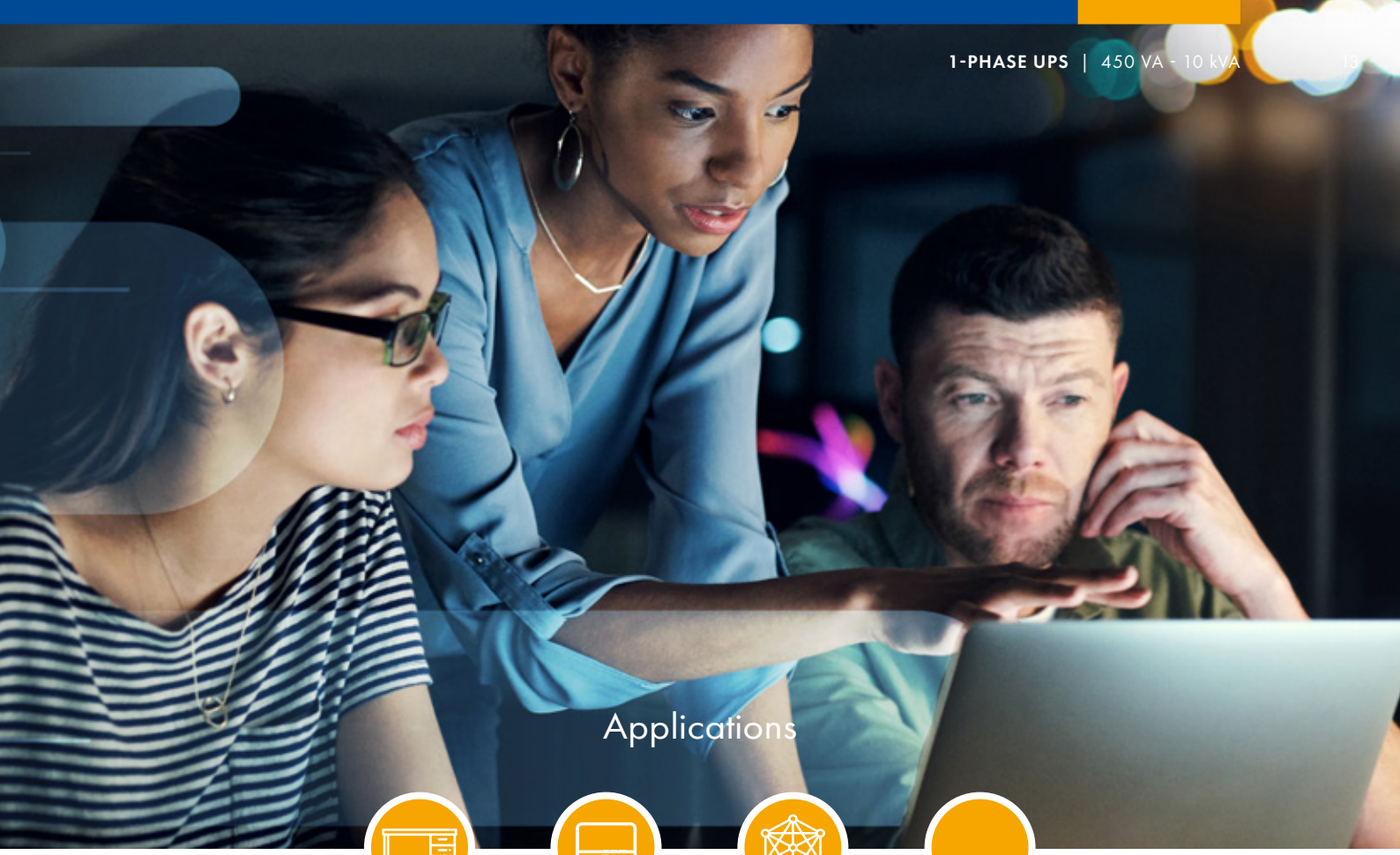
ECS – EMERGENCY CENTRAL SYSTEMS

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 **450 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

Online UPS's can be used in both tower and rack configurations.

Suitable for a variety of Small-Office and Home-Office applications, Borri 1-phase UPS's Giotto, Galileo and Leonardo have been designed to prevent power interferences and to keep your small and medium equipment running.

GIOTTO

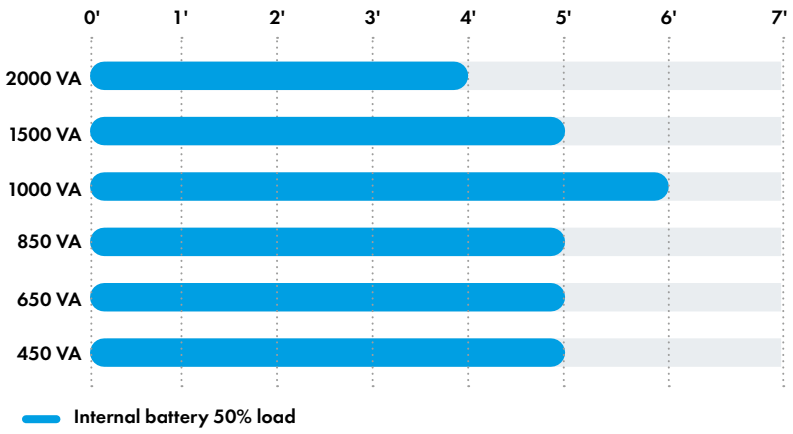
from 450 VA — to 2000 VA

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:
  - Best power protection for PC from 450 to 850 VA with one output receptacle (IEC 320-C13) and one Schuko.
  - Advanced power protection from 1000 to 2000 VA 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 managements.
- Cold start for powering loads when mains are not available.
- Borri Power Guardian user-friendly UPS management software free downloadable at www.borri.it/download (for more info see p.20/21).

Back up time with internal batteries



GIOTTO technical data

Rating (VA)		**450**	**650**	**850**	**1000**	**1500**	**2000**
Nominal Power (W)		**270**	**380**	**500**	**600**	**900**	**1200**
UPS dimensions WxDxH (mm)		100x292x140			148x315x198		
UPS weight (kg)		4	5	5.5	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		1 IEC 320-C13 and 1 Schuko			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	5	5	5	6	5	4
	100% load	3	3	3	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 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007					
Safety		IEC/EN 62040-1					
EMC		IEC/EN 62040-2					
Marking		CE					

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

GALILEO

from 1000 VA — to 3000 VA

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

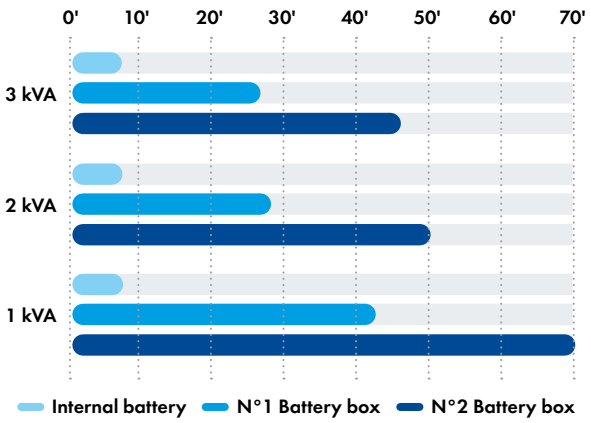
Features and benefits

- On-line double conversion UPS from 1000 to 3000 VA, Tower and 2U Rack/Tower from three to six output receptacles (IEC 320-C13) and one or two Schuko.
- Rack/Tower convertible design 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 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.
- Programmable switched outlet group for setting load priorities.
- 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.
- 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.20/21).

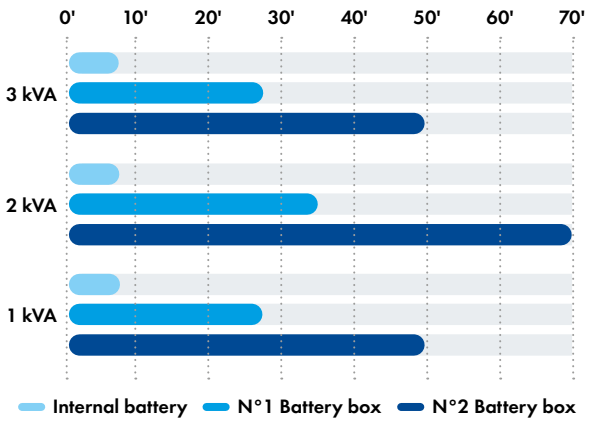
Main options

- 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.
- Rack PDU with external sockets and manual bypass switch.

Back up time for **Rack/Tower UPS**



Back up time for **Tower UPS**



GALILEO technical data

UPS Type		T *	T *	T *	RT (2U) **	RT (2U) **	RT (2U) **
Rating (VA)		**1000**	**2000**	**3000**	**1000**	**2000**	**3000**
Nominal Power (W)		**900**	**1800**	**2700**	**900**	**1800**	**2700**
UPS dimensions WxDxH (mm)		144x367x236	151x444x322	189x444x322	440x390x88	440x475x88	440x600x88
UPS weight (kg)		11.2	18.8	24.9	12.0	17.0	26.5
Input							
Connection type		IEC 320-C14		IEC 320-C20	IEC 320-C14		IEC 320-C20
Nominal voltage		230 Vac 1-phase					
Voltage range		195 to 260 Vac					
Frequency and range		50/60 Hz, 45 to 65 Hz					
Power factor		0.98			0.99		
Current distortion (THDi)		<3%					
Output							
Connection type		3 IEC 320-C13 1 Schuko	3 IEC 320-C13 2 Schuko	6 IEC 320-C13 2 Schuko	3 IEC 320-C13	6 IEC 320-C13	
Nominal voltage		230 Vac +/-1% 1-phase					
Frequency		50/60 Hz					
Power factor		Up to 0.9, without power derating					
Overload capability		105% continuous, 120% for 30 seconds, 150% for 10 seconds, >150% transfer to bypass					
Mode of operation		On-line, Eco mode					
Battery							
Autonomy time internal battery (min.) ◊	50% load	12	13	15	12	13	15
	100% load	6	6	6	6	6	6
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, 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 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007					
Safety		IEC/EN 62040-1					
EMC		IEC/EN 62040-2					
Marking		CE					

*Tower **Rack/Tower ◊ Measurement conditions: optimised parameters, fully charged battery, 0.7 PF


GALILEO **T 1 kVA**


GALILEO **T 2 kVA**


GALILEO **T 3 kVA**


GALILEO **RT 2/3 kVA**


GALILEO **RT 1 kVA**

LEONARDO

from 6 kVA —— to 10 kVA

High-power on-line

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

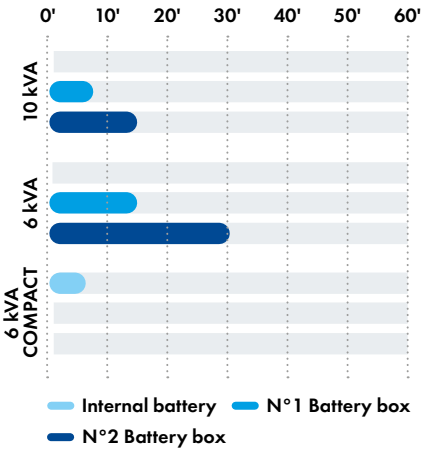
Features and benefits

- On-line double conversion UPS from 6 to 10 kVA, Tower and 2U or 3U Rack/Tower.
- Parallel redundant configuration maximizing the availability.
- Rack/Tower convertible design 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 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.20/21).

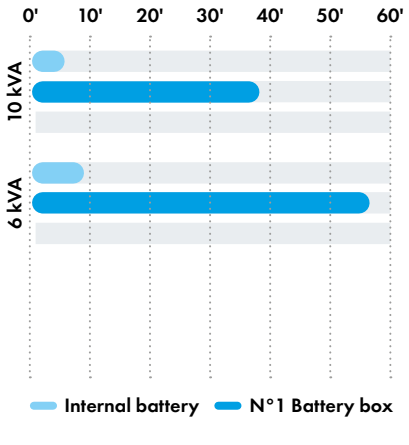
Main options

- 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.
- Rail kit Rack/Tower.
- Rack PDU with external sockets and manual bypass switch.

Back up time for **Rack/Tower UPS**



Back up time for **Tower UPS**



LEONARDO technical data

UPS Type		T *	T *	RT (2U) ***	RT (4U) **	RT (3U) ***
Rating (kVA)		**6**	**10**	**6**	**6**	**10**
Nominal Power (kW)		**5.4**	**9**	**5.4**	**5.4**	**9**
UPS dimensions WxDxH (mm)		290x645x748	290x645x748	440x680x88	440x680x176	440x680x132
UPS weight (kg)		86	96	24	52	26
Input						
Connection type		Hardwired 2w (rectifier), 2w (bypass)		Hardwired 2w		
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	external battery	15	external battery
	100% load	9	6	external battery	6	external battery
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 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007				
Safety		IEC/EN 62040-1				
EMC		IEC/EN 62040-2				
Marking		CE				

*Tower with internal battery **Rack/Tower with internal battery ***Rack/Tower without internal battery
◊ Measurement conditions: optimised parameters, fully charged battery, 0.7 PF

LEONARDO **T 6/10 kVA**

LEONARDO **RT (4U) 6 kVA**

LEONARDO **RT (3U) 10 kVA**

LEONARDO **RT (2U) 6 kVA**

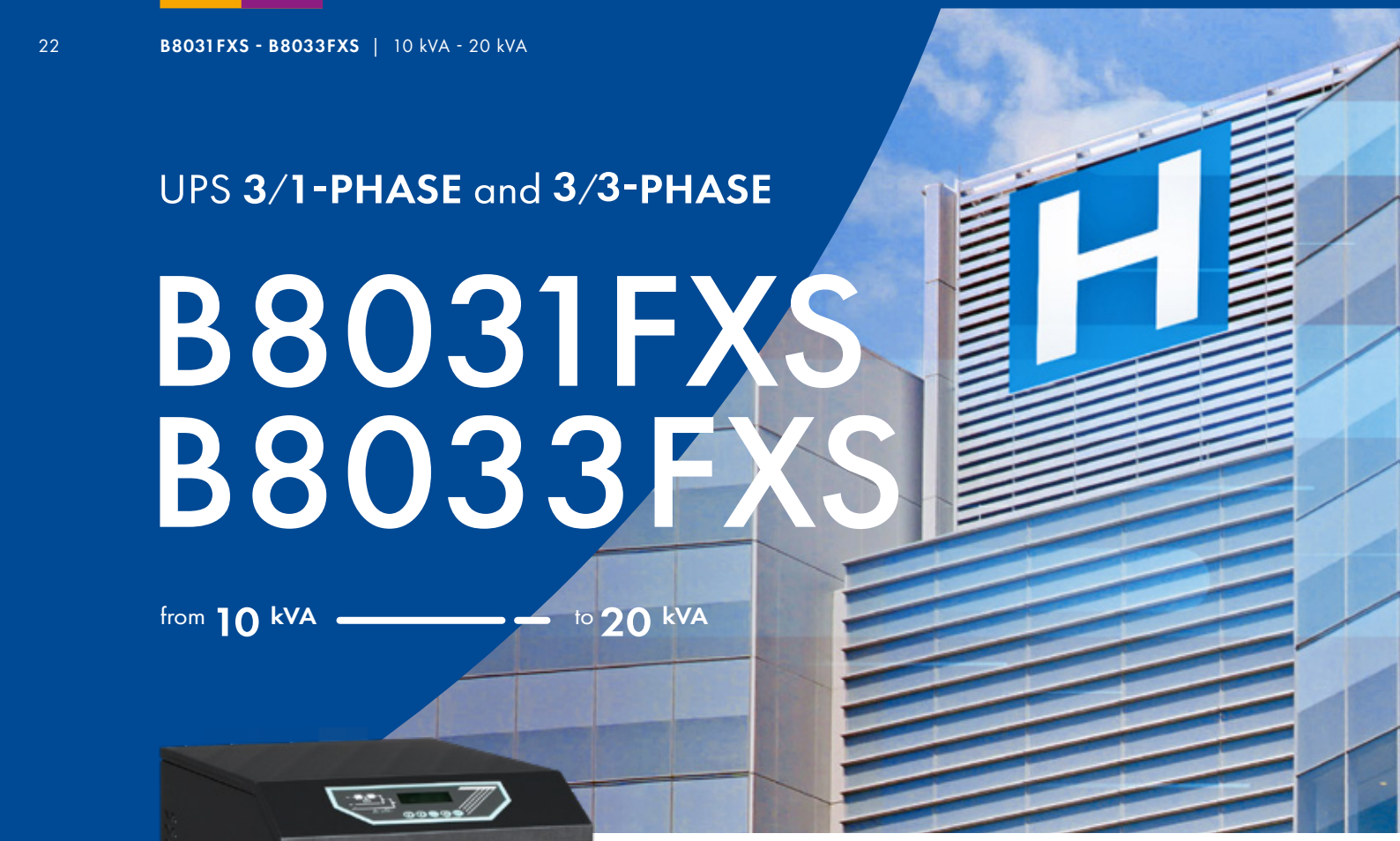
POWER GUARDIAN
1-PH UPS MONITORING SOFTWARE

available for **MAC** and **MICROSOFT WINDOWS**

Borri Power Guardian is a **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.
- Available for MAC and Microsoft Windows operating systems (complete list at www.borri.it/download).
- Download Borri Power Guardian 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.

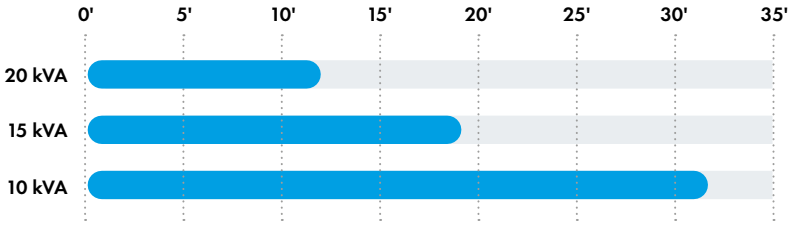
Robust, customisable and easy-to-maintain UPS, available as either 3-phase in/1-phase out or 3-phase in/3-phase out. B8031 FXS and B8033 FXS series is suitable for server rooms, IT equipment, industrial controls, medical equipment and process automation.

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 wth 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.

B8031FXS - B8033FXS 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	**B8031FXS (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	**B8031FXS (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 for single UPS; 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

*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 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.

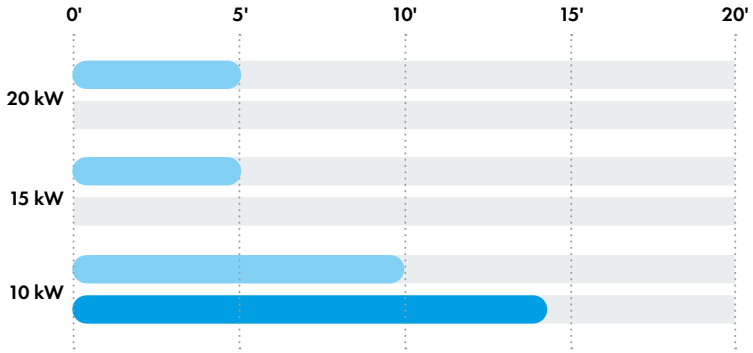
One of the most compact and easy to use solutions on the market, designed for critical power applications such as networks and servers, small and medium data centres, telecommunication. The UPS is available in the 10-20 kW range with online double conversion technology and parallel redundant configuration.

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		
Accessibilty	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

GREEN CONVERSION

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.

Continuous savings

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

Compact footprint

Efficient compact UPS with transformer free design.

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.

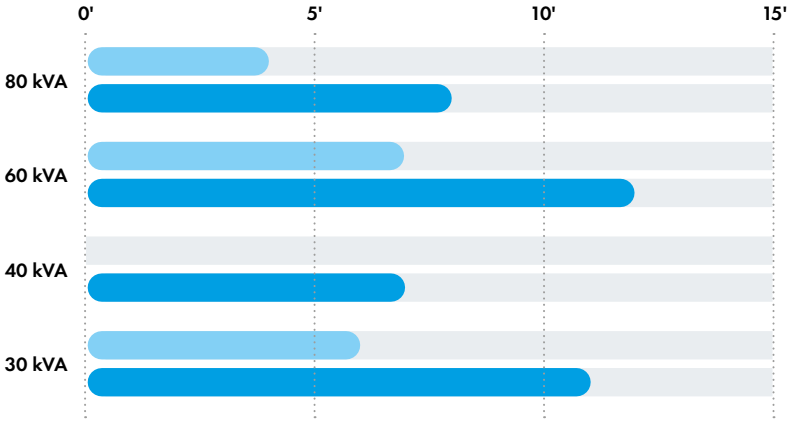
Ingenio Plus: compact and very high efficient solution perfect for supplying reliable uninterrupted quality power to all critical applications.

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.

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

Back up time with internal batteries



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 8 units for system redundancy.
- 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 for single UPS and load-sync box (2 UPS systems); 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)				
Accessibilty	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 9001:2015, 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 MAX

from **200** kW —— to **500** kW

GREEN 3-L CONVERSION

Applications

- Medium data centre
- Large data centre
- Network & Server
- Industrial controls & process automation
- Medical equipment
- Building automation

Very High Efficiency

Patented 3-level Green Conversion technology.

Compact footprint

Some of the most compact footprints on the market and full front access.

Reduced TCO

Flexible system up to 4 MW in a minimum space.

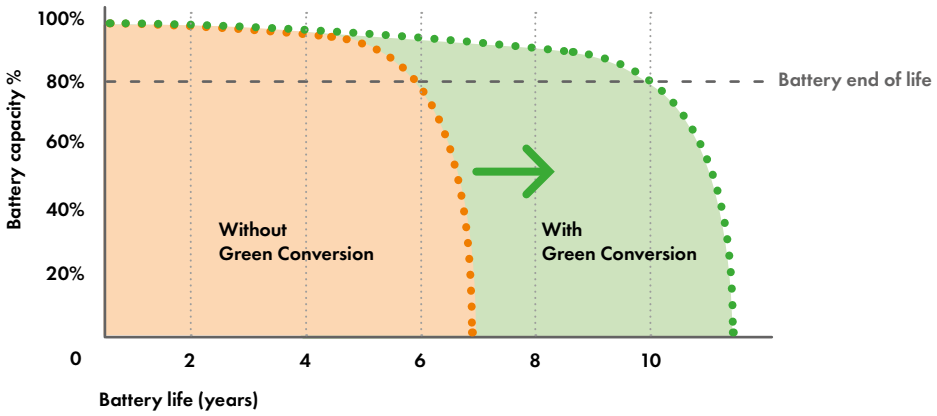
Low Total Cost of Ownership, high efficiency and compact solution for supplying reliable uninterrupted quality power to all critical applications in networking and medium to large data centre, health, finance, industrial processing, building and transportation markets and for TLC.

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

Features and benefits

- Three level Green Conversion, for enhanced system efficiency, very low noise and the lowest TCO in its category.
- Full output power rating (pf=1), ensuring optimal UPS sizing and high flexibility for all types of loads.
- On-line double conversion transformer-free design for low PUE and TCO.
- Full IGBT technology and electronic PFC,ensuring 0.99 input PF and THDi<3% for maximum upstream sources compatibility.
- Dynamic Charging Mode (DCM) for maximum versatility in long autonomy and low charging time applications.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- Increased power density, for unmatched floorspace saving.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliant with international product standards for maximum quality guarantee.
- Colour touch screen 10" display for easy monitoring and control.
- Lithium Battery compatible.

Green Conversion Battery Care vs conventional float charge enhanced battery service life



Main options

- Transformers/autotransformers for isolation or voltage adjustment.
- Battery voltage temperature compensation.
- External maintenance bypass wall-mounted box.
- Battery fuse switch wall-mounted box.
- Battery cabinets for long autonomy times.
- Parallel up to 8 units for system redundancy.
- Load-sync option.
- Common battery on selected models.
- Backfeed protection trip coil.

INGENIO MAX technical data

Rating (kVA)	**200**	**250**	**300**	**400**	**500**
Nominal Power (kW)	**200**	**250**	**300**	**400**	**500**
UPS dimensions WxDxH (mm)	880x970x1978			1430x970x1978	
UPS weight (kg)	530	745	675	1080	1250
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	Common battery; central bypass; cold start; Input /Output/Bypass isolation transformer; other I/O voltages 480/690 Vac with autotransformers; external maintenance bypass; battery fuse switch box; custom battery cabinets; battery thermal probe; parallel kit; load-sync for single UPS and load-sync box (3 UPS systems); top cable entry; backfeed tripping coil for bypass disconnector; 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				
Accessibilty	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
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**

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.

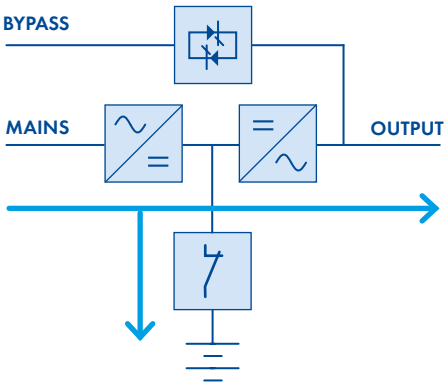
B9000FXS: reliable, rugged transformer based power solution.

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 for single UPS and load-sync box (2 UPS systems); 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							
Accessibilty	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 9001:2015, 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**

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.

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.

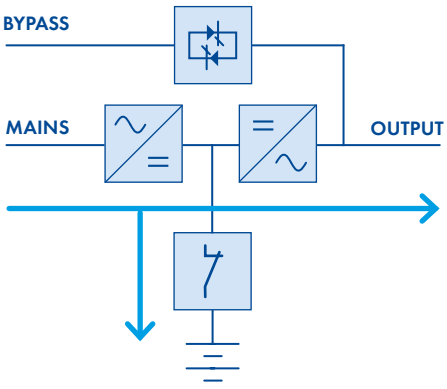
B9600FXS: reliable, high power transformer based power solution.

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 for single UPS and load-sync box (2 UPS systems); 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			
Accessibilty	Front and top access, bottom cable entry			

*according to IEC/EN 62040-3

Other features

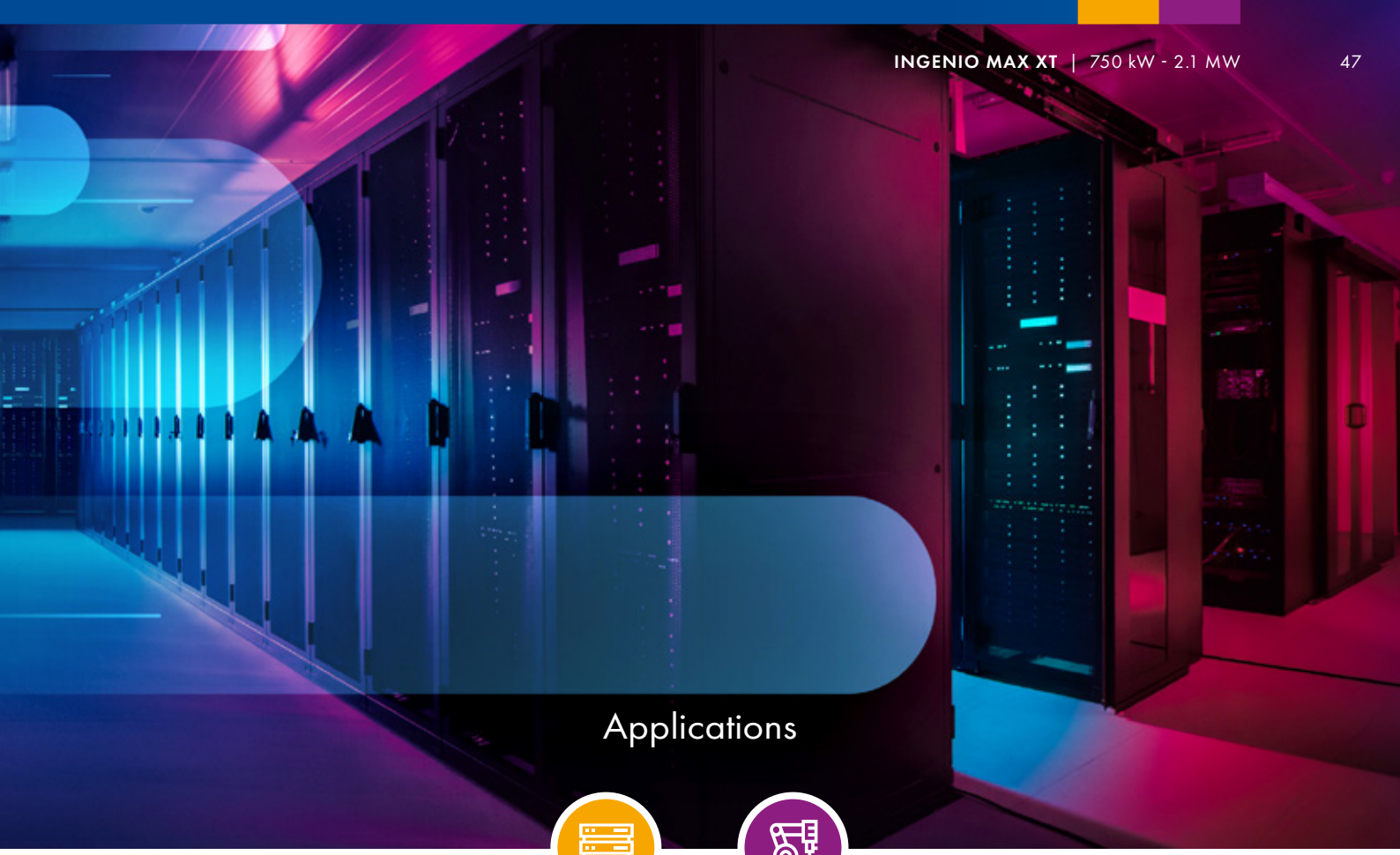
Environmental	
Operating temperature range	0°C to +40°C
Storage temperature range	-10°C to +70°C
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m
Audible noise at 1 m (dBA)	< 62
Standards and certifications	
Quality assurance, environment, health and safety	ISO 9001:2015, 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

SCALABLE HI-POWER
3-PHASE UPS

INGENIO MAX XT

from **750** kW —— to **2.1** MW

GREEN 3-L CONVERSION



Applications

Large data centre

Industrial controls & process automation

High Efficiency

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

Scalable Modules

Scalable modules up to a 2.1 MW UPS to grow with your needs.

Reduced TCO

High power density in a minimum space maximizing the number of racks and servers installed in your data centres.

Scalable, high efficiency UPS system supplying reliable uninterrupted quality power to all critical applications. High efficiency operating modes and easy hot maintenance allow for lowest Capex and Opex. Flexible configuration and positioning make it totally adaptable to your facility and business.

Ingenio Max XT: scalable, flexible and efficient solution for both data centre and critical applications.

Features and benefits

- 250 kW or 300 kW MPM scalable power modules rated at 40°C operating temperature, for lower TCO and high flexibility to grow on demand.
- Patented 3-Level Green Conversion technology for highest efficiency with optimal component count to increase reliability.
- Selectable hi-efficiency modes of operation.
- >96% VFI online efficiency starting from 40% load for very low TCO and meeting local regulations for subsidies (applies in some countries).
- Up to 99% high efficiency mode.
- Scalable up to 2.1 MW unit power, for N+1 and A+B redundant configurations.
- Available in Central or Distributed Static Bypass and Common or Modular Battery.
- Hot maintainable modules (VFI), reducing mean time to repair and ensuring no system downtime.
- Innovative design, resulting in reduced footprint, ease of maintenance and low audible noise levels.
- Hot scalability (in VFI mode) option to increase the availability of your system.
- Flexible and customisable mechanical features like top or bottom connections, L- or back to back configuration ensuring maximum system design flexibility.
- Centralised 10" colour touch screen display providing all user info and history information at a glance.
- Green Conversion Battery Care (GCBC) for extended battery service life.
- Lithium Battery compatible.

Main options

- Manual Bypass Module.
- Hot-Scalable Extension module.
- Input Protection (Input and Bypass).
- 50 kA and 100 kA Input SC withstand.
- Peak Shaving.
- Load-sync option.
- Backfeed protection trip coil.

Fully Scalable System

Power expansion or redundancy can be implemented at a later stage by installing additional MPM modules up to 2.1 MW.

DAY 1 : 1200 kW DAY 2 : 1500 kW DAY 3 : 1800 kW DAY 4 : 2100 kW

INGENIO MAX XT technical data

Rating (kVA)	**750**	**900**	**1000**	**1200**	**1250**	**1500**	**1800**	**2100**
N Nominal Power (kW)	**750**	**900**	**1000**	**1200**	**1250**	**1500**	**1800**	**2100**
N+1 Nominal Power (kW)	**500**	**600**	**750**	**900**	**1000**	**1200**	**1500**	**1800**
MPM module size (kW)	**250**	**300**	**250**	**300**	**250**	**300**	**300**	**300**
UPS dimensions WxDxH (mm)*	4090x970x2100		4970x970x2100	5370x970x2100	6250x970x2100		7580x1200x2100	8460x1200x2100
UPS weight (kg)*	3150	3300	4000	4250	4900	5200	6400	7300
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: 125% 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; 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); SPDT contact relay board; ModBus-RTU (RS485). **Optional:** ModBus-TCP/IP (Ethernet); ModBus-RTU to PROFIBUS DP adapter							
Optional features	Isolation transformer; custom battery cabinets; battery thermal probe; 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							
Accessibilty	Front and top access, bottom and top cable entry							
Scalability	Up to 2.1 MW							

*dimensions may vary with configuration. Contact our sales team for confirmation **conditions apply ***according to IEC/EN 62040-3

Other features

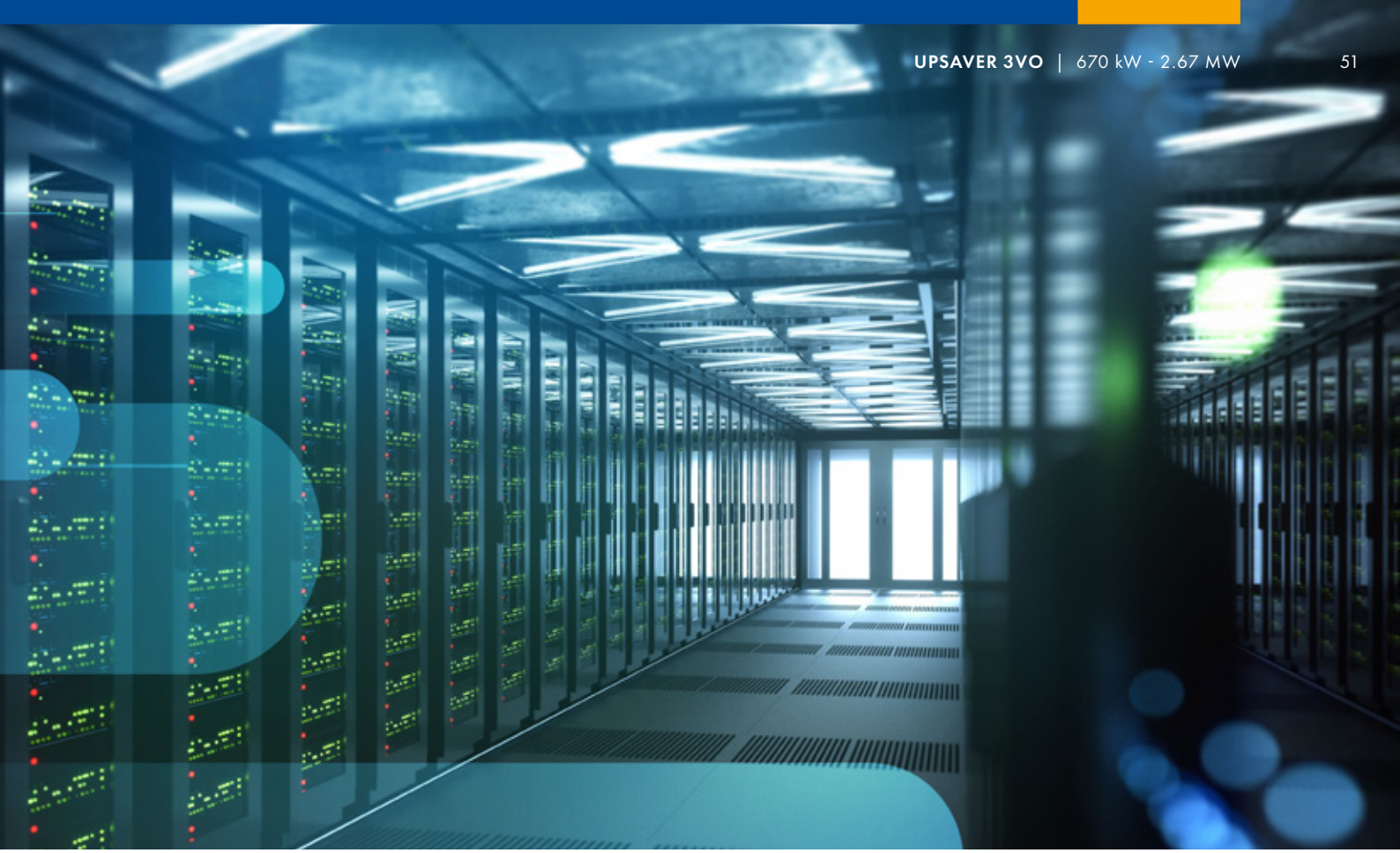
Environmental	
Operating temperature range	0°C to +40°C with no power derating
Storage temperature range	-10°C to +70°C
Altitude (AMSL)	< 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m
Audible noise at 1 m (dBA)	65
Standards and certifications	
Quality assurance, environment, health and safety	ISO 9001:2015, 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

MODULAR HI-POWER
3-PHASE UPS

UPSAVER 3VO

from **670 kW** —— to **2.67 MW**

GREEN 3-L CONVERSION



UPSaver 3vo

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.

With the most compact high efficiency 333 kW modules the system can be scaled up to a 2.67 MW in a single UPS or power paralleled up to 21 MW for higher power.

For more info click on the QR or contact our Borri Data Centre Sales Team.

BENEFITS

Highest overall efficiency

Highest efficiency means cost savings to your data centre. UPSaver provides VFI high efficiency >96% from 30% loads to reduce costs in actual site conditions thanks to 3-Level Green Conversion technology, multi-mode high efficiency operations and our module current parallel technology.

Modular hot swappable

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

Flexible 3D scalability

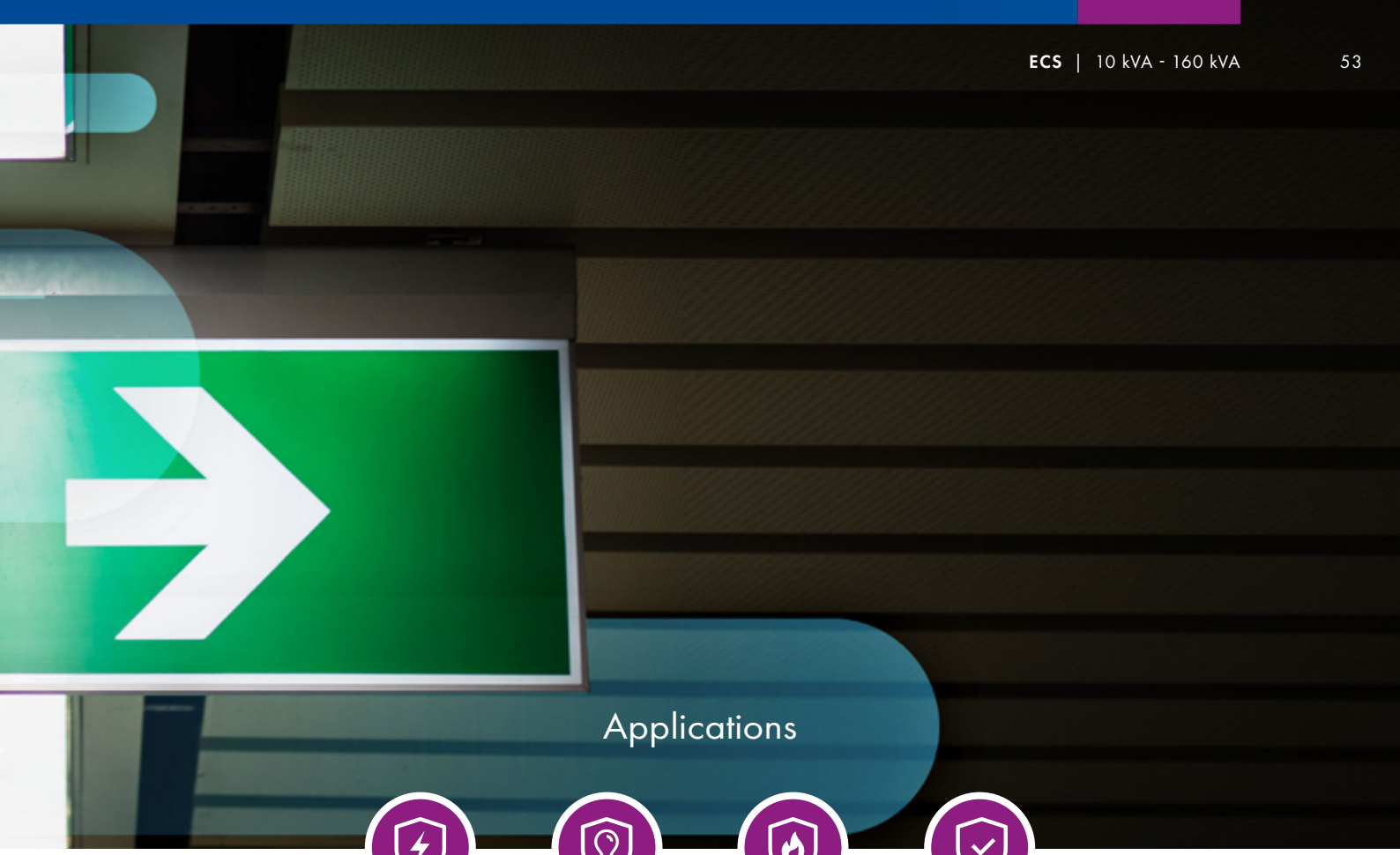
Flexible mechanical installation and hot power upgrade.

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 a 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).

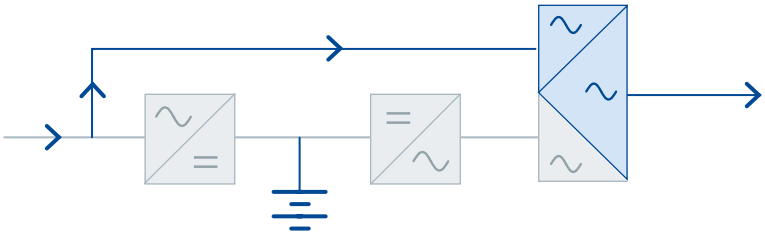
E8000 ECS 10-20 kVA

INGENIO ECS 100-160 kVA

Operating mode

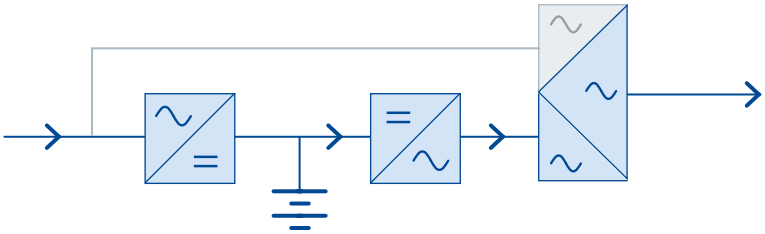
Changeover mode - Always On (AO)

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



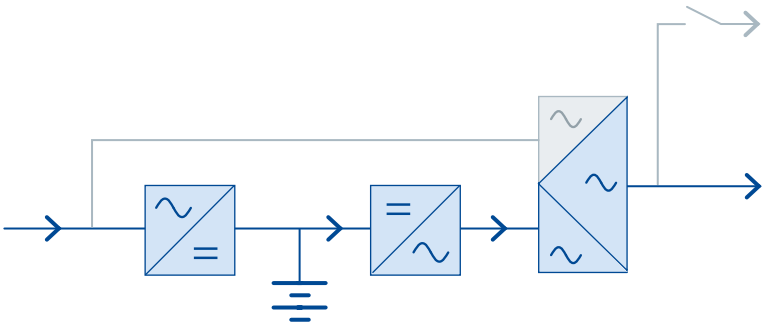
Mode without interruption - Always On (AO)

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 for single UPS; AO+EO mode kit; separate input for rectifier and bypass line (for 3-phase output models); parallel kit; other options on reques		
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 9001:2015, 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

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 for single UPS; 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 9001:2015, 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

STATIC TRANSFER SWITCHES
1- and 3-PHASE

STS

from 16 A —— to 3000 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 crititical 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 16-32

from **16 A** —— to **32 A**

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

STS 16-32 front view

STS 16 rear view

STS 32 rear view

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.

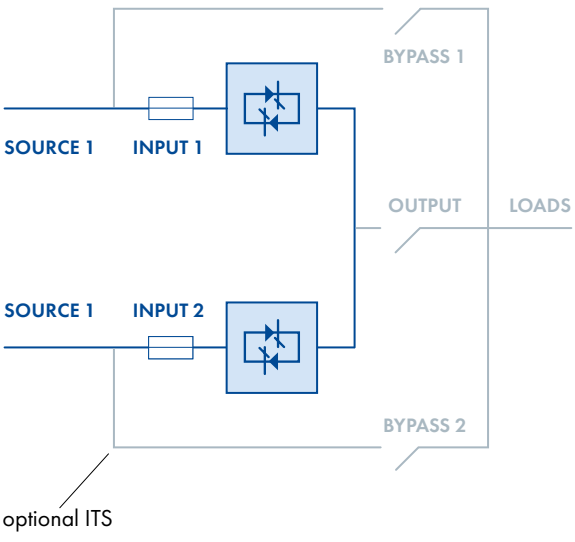
Main options

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

ITS maintenance switch main features

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

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	
Accessibilty	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 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007
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

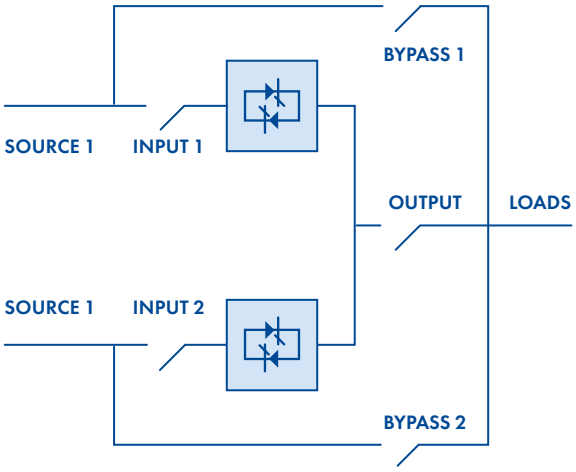
from **100 A** — to **3000 A**

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

Features and benefits

- Continuous monitoring of voltage and frequency and automatic instant (<4 ms) transfers for secure power switching without cross connection between sources.
- Short circuit transfer inhibit for robust load protection.
- SCR fault detection and backfeed protection for maximum upstream safety.
- Dual manual bypass for complete source independence during maintenance.
- True oversized neutral (2x In), redundant cooling with monitored fans and redundant (3x3) internal power supply in all system control boards for top product reliability in high availability applications.
- Full front access for easy maintenance.
- Bottom and top cable entry for maximum installation versatility.
- Comprehensive set of communication options for total remote monitoring of equipment operation.
- Fully compliance with all international product standards for maximum quality guarantee.
- Circuit breakers for reliable and safe tripping on all operating conditions.

STS block diagram



Main options

- Isolation transformer.
- Plug-in breakers.
- Output distribution panels.
- Panel builder version.
- Additional SPDT contact relay board.
- 4-pole configuration.
- Operation without neutral.

Dry contact relay card
(Included)

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

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

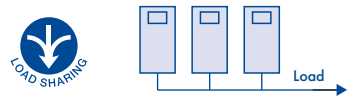
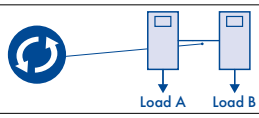
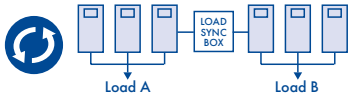
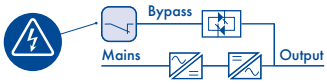
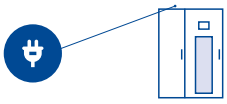
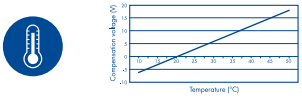
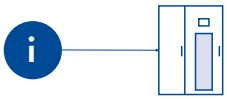
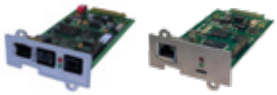
Rating (A)*	100	250	400	630	800	1000	1250
Dimensions WxDxH (mm)**	820x835x1475			1220x860x1900		2000x1000x2100	
Weight (kg)**	265	290	305	615	660	1000	1450
Input							
Connection type	Hardwired 4w						
Nominal voltage	208/380/400/415/440/480 Vac 3-phase with neutral						
Voltage tolerance	±10% (up to ±20% on request)						
Frequency and range	50/60 Hz, ±2 Hz (up to ±4 Hz on request)						
Source harmonic voltage content	Unlimited (if THD>20% transfer time ≤10ms)						
Transfer phase angle	5° to 30°						
Output							
Connection type	Hardwired 4w						
Nominal voltage	208/380/400/415/440/480 Vac 3-phase with neutral						
Frequency	50/60 Hz						
Transfer time	≤4 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 30 min, 150% for 10 min, 200% for 30 s, 2000% for 1 cycle, 4000% for ½ 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						
Optional function extensions	4-pole configuration; plug-in circuit breakers; operation without neutral; panel builder execution; output distribution panels; isolation transformer						
System							
Protection degree	IP 20 (other options)						
Colour	RAL 9005 (other options)						
Installation layout	Wall, back to back and side by side installation allowed						
Accessibilty	Front access, bottom and top cable entry						

*rating up to 3000 A on request **3-pole version *** conditions apply

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 9001:2015, ISO 14001:2015, BS OHSAS 18001:2007
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	Ingenio Max XT
	●	●	●	●	●	●	
	●		●	●	●	●	●
			●	●	●	●	●
	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*	●	●	●	●
	●	●	●	●	●	●	●
	●		●	●	●	●	●
	●	●	●	●	●	●	●
	●	●	●	●	●	●	●

GUARDIAN NET
REMOTE DIAGNOSTICS AND PREVENTIVE MONITORING

Guardian Net improves Business Continuity by remote diagnostics and preventive monitoring of your UPS system and peripherals by preventing unpredictable anomalies to become failures.

Early detection of any deviations of critical parameter and prompt reaction in case of alarms result in extended uptime and enhanced operational efficiency. Real time monitoring and periodic reports on the health of equipment provide complete peace of mind, delivering unparalleled support experience.

BENEFITS

Extending Uptime

Together with a Borri Maintenance Contract, Guardian Net allows our Service specialists to take care of your system by monitoring its parameters and quickly reacting to anomalies.

Increasing Business Continuity

Guardian Net provides you with continuous monitoring of your system, giving you comprehensive operational awareness and providing technical recommendations and reports by Borri Service Centre for improving the quality and reliability of your system.

Reducing Total Cost of Ownership

Guardian Net is an on-site virtual Service specialist 24/7, monitoring all relevant parameters, maximizing system performance, reducing on-site maintenance and minimizing your total cost of ownership by extending the life of your critical equipment.

FEATURES

Web Proactive Maintenance

Our Service specialists monitor your equipment from the Borri Service Centre, analysing data and trends, to proactively recommend actions for ensuring equipment always performs at its best.

Warning and alarm notification

Guardian Net continuously monitors the system and should any critical parameters exceed the preset tolerance, it generates a warning or alarm notification to you and the Borri Service Centre. Our Service specialists will investigate the data, find the cause and take actions based on the customer's maintenance contract. This ensures that in case Service engineers are dispatched on-site, they arrive prepared for first time resolution, reducing downtime and increasing system availability.

Status Reports

The unit parameters are collected by our Service Centre and presented in periodic status reports. You will receive a comprehensive analysis of your equipment and its operational performance, as well as demonstration that it is under continuous remote monitoring.

Total Service Support

Borri supports critical infrastructures with a comprehensive offering of their Service specialists, enhancing system availability and ensuring total peace of mind 24/7.

Data Manager Unit (DMU) technical data

To monitored device	
Communication port	RS485 ModBus
Protocol	ModBus-RTU/ASCII slave
Max no. of connected devices*	16
To Service Centre	
Communication port	RJ45 Ethernet
Protocol	Open VPN (based on Open SSL), http, SMTP, ModBus-TCP/IP
Services	Web Server, NTP time stamping
Notification	**Included**: email - **Optional**: text message via https or via RS232 modem
Options	
	30 h backup battery, system integrator version (no box), GSM/GPRS modem (SIM card not included)
System	
Power supply	100 to 240 Vac
Installation	Wall-mounted box
Dimensions WxDxH (mm)	400x200x400
Weight	15 kg (w/ backup battery), 12 kg (w/o backup battery)
Protection degree	IP 20 (IP 65 on request)
Colour	RAL 7035
Environmental	
Operating temperature range	0°C to 40°C
Storage temperature range	-10°C to 70°C

*conditions apply

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

E3001
Industrial 3-Phase UPS
from 5 to 600 kVA

UMB AC
Industrial Modular UPS
from 10 to 320 kW

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

GMC.igbt
Green Mobility
Charger for E-Bus
300-600-1000 A

SERVICE

Customer's expectation defines Borri's priority from the early analysis of the project requirements to a worldwide commissioning and service. Many thousands of systems have been successfully installed and maintained globally, with continuous support from a highly trained team of expert, certified technicians and engineers. From the professional set-up of Borri's training centre or on site, the training and service team stand ready to provide support and contribute to tailored training at Borri or on site.You can be assured of Borri support to the highest standards no matter where in the world you are.

Planning, installation, commissioning

Borri assist you in every single step of your project. Our R&D team can analyse and develop solutions to a wide range of edge system requirements.

Analytical tests

Borri undertakes a series of analytical tests in order to guarantee higher efficiency and continuity to your system operation.

Repair & spare parts

All spare parts supplied by Borri are original, tested and guaranteed to be fully compliant with Borri solutions.

Remote monitoring

Guardian Net remote monitoring system allows you to detect any deviation from optimum operation and trigger proper and immediate response, so that anomalies don't evolve into issues.

Maintenance

Preventive maintenance guarantees uninterrupted operations and optimised system efficiency.

Battery tests

Batteries have a limited time life and their proper maintenance is of high importance to guarantee efficiency to the UPS and avoid potential failures. Borri delivers high quality and performing batteries to assure smooth operations.

Training

Borri offers distributors and customers a service training structured in 3 levels. Courses can be held in Borri training centres or on-site.

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Due to our policy of continuous development, data in this document is subject to change without notice and becomes contractual only after written confirmation

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