

SINGLE PHASE UPS

from 450 VA to 10 kVA





SINGLE PHASE UPS BROCHURE

YOUR CRITICAL POWER SOLUTION PARTNER.

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

— Borri's R&D vast expertise in all facets of firmware, power electronics and mechanical design provides innovative solutions for tomorrow's problems in Industrial and Critical Power applications.

— The company prides itself on its first-class service and superior engineering disciplines. To ensure sustained quality, Borri manages all its processes in house from feed studies to design, production and after sales service technology.

— Based in Bibbiena, Italy with over 15,000 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

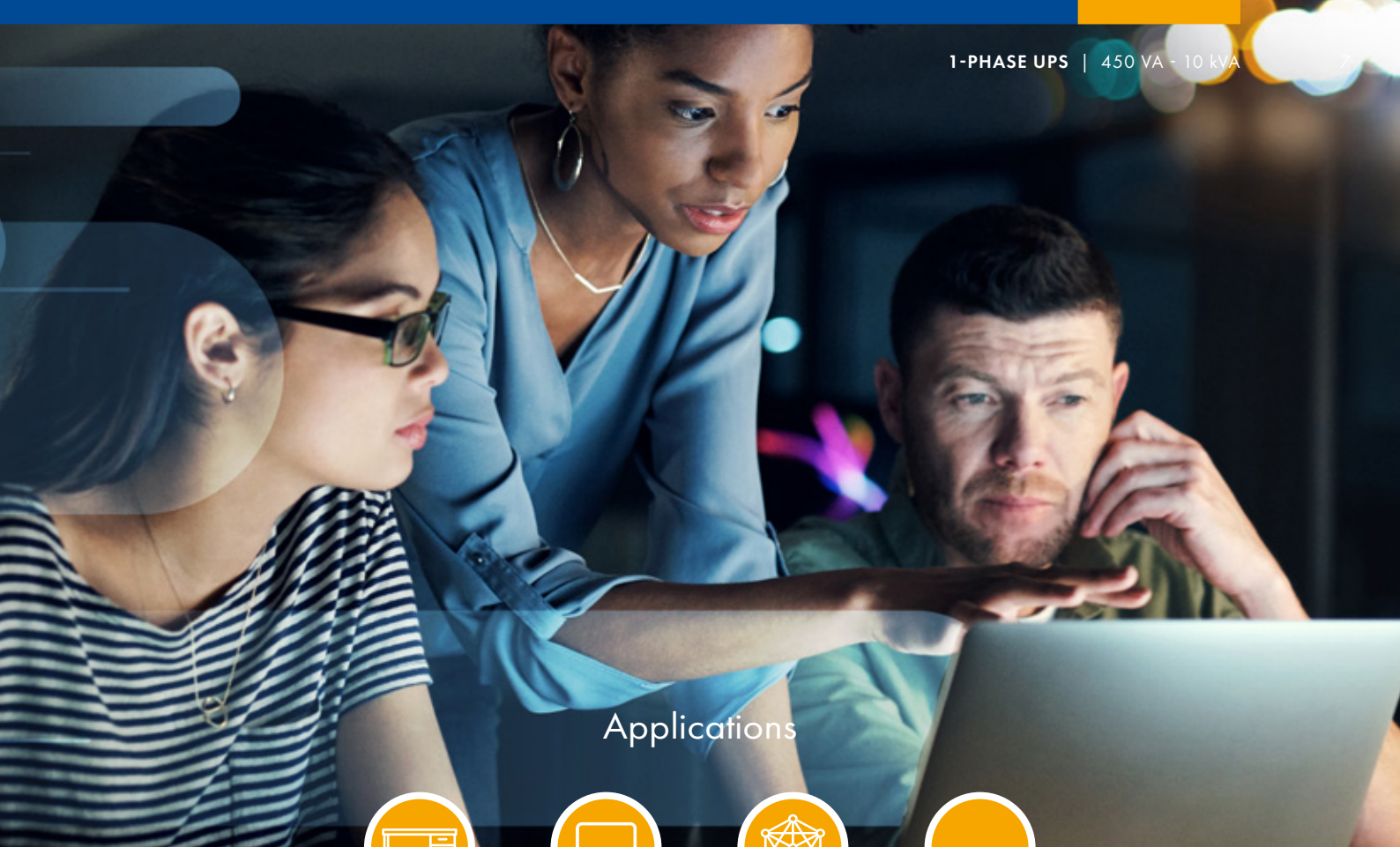
Borri team of experts support you to the highest standards no matter where you are in the world.



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

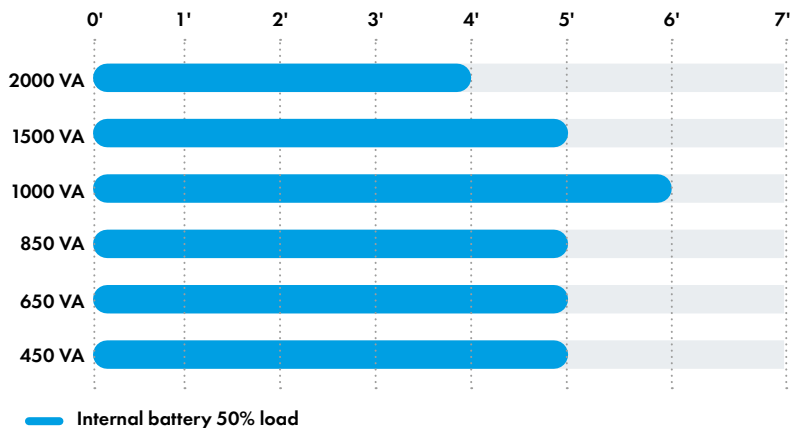


Line interactive 1-Phase UPS
ideal for home and small office,
computers and peripherals.

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.) \diamond	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						

\diamond Measurement conditions: optimised parameters, fully charged battery, 0.6 PF



GALILEO

from 1000 VA — to 3000 VA



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.

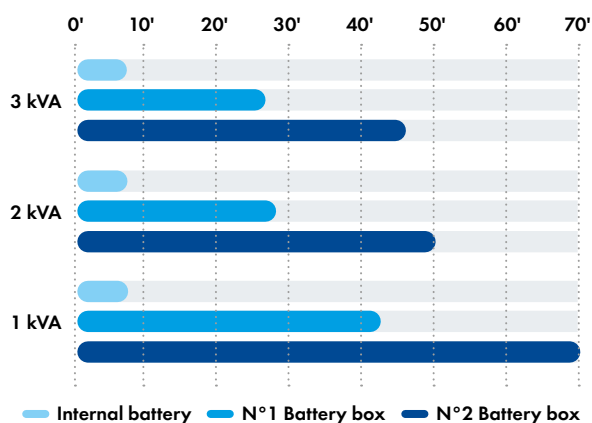
On-line 1-Phase UPS with Tower and Rack/Tower convertible design ideal for small and medium businesses, networks and servers.

- 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).

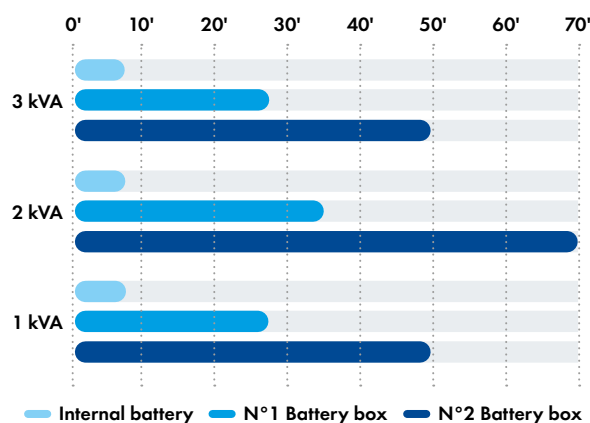
Main options

- 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



LEONARDO

from 6 kVA — to 10 kVA



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.

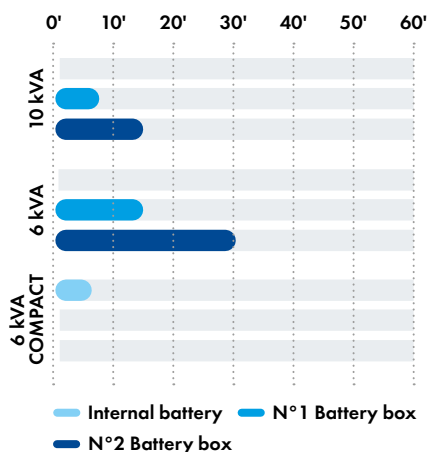
High-power on-line

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

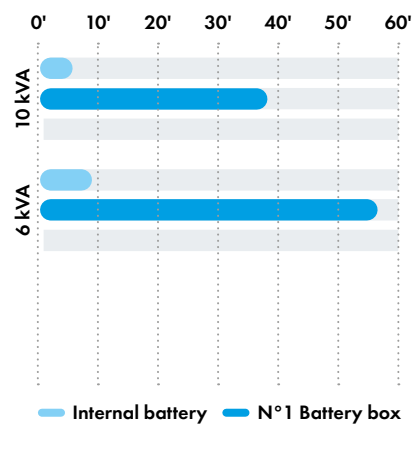
Features and benefits

- 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).

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 T6/10 kVA



LEONARDO RT (4U) 6 kVA



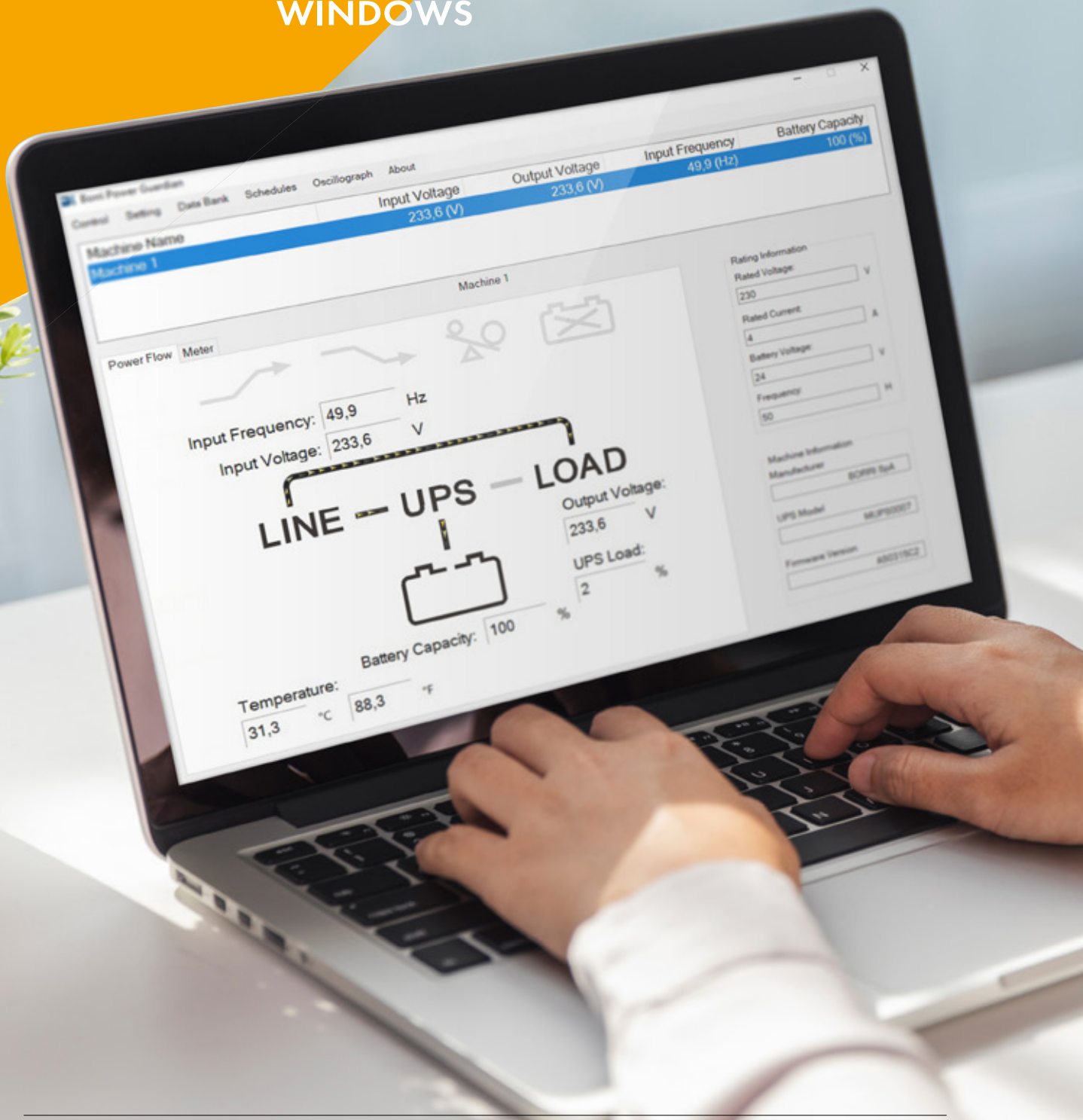
LEONARDO RT (3U) 10 kVA



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.



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.



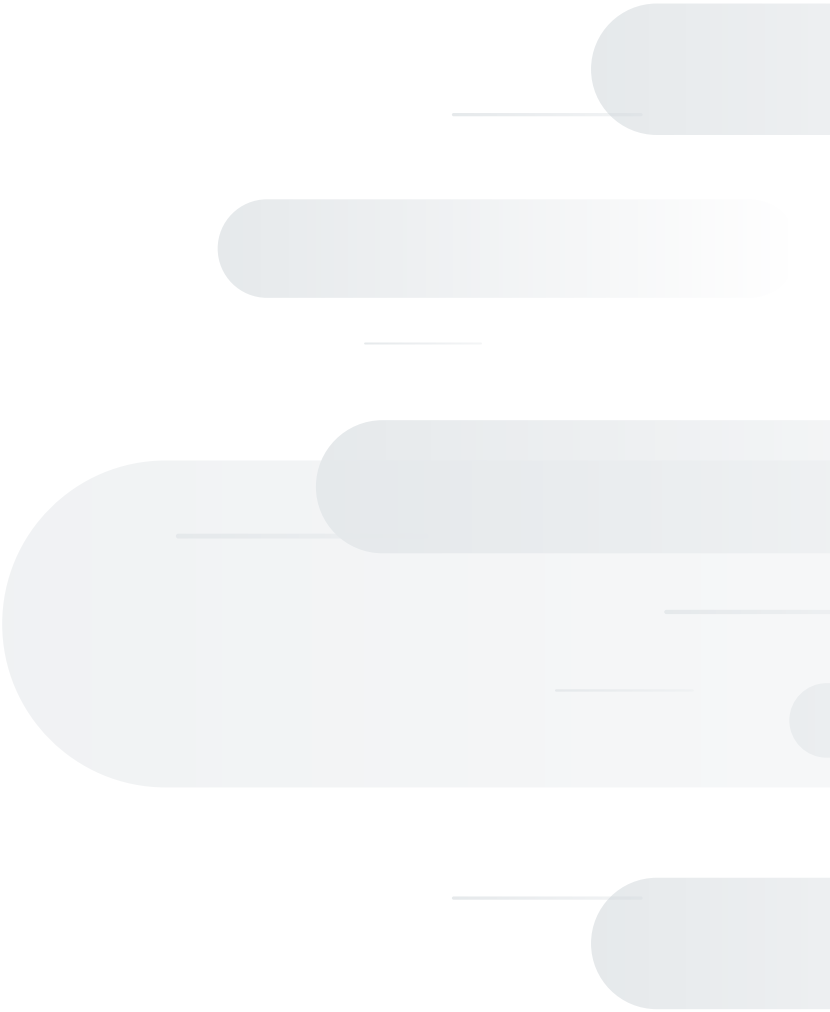
Battery tests

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.





www.borri.it

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