

INGENIO
30-50 kVA
For server rooms
TLC equipment
Emergency and
safety systems
Industrial
automation



INGENIO
30 to 50 kVA
Three phase
On-line
double conversion
Transformer free
Full IGBT technology
Paralleling up to 300 kVA

BORRI

INGENIO

30-50 kVA

For server rooms
TLC equipment
Emergency and safety systems
Industrial automation

Features and benefits

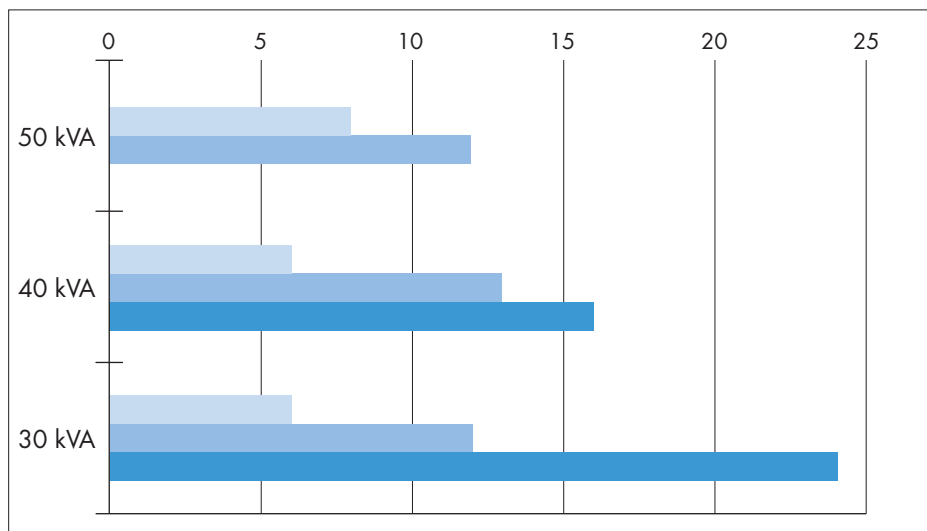
- High double conversion efficiency and ECO mode for low running costs and environmental impact.
- Transformer free design for light small size layout.
- Removable power modules architecture and built-in diagnostics for easy maintenance and very low MTTR.
- Hot connection/disconnection of parallel units for easy system resizing.
- Full IGBT technology and electronic PFC, ensuring 0.99 input PF and THDi<3% 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.
- Fully compliance with all international product standards for maximum quality guarantee.

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 kit.
- Load-sync for single UPS units.
- Input terminals for remote EPO, external manual bypass auxiliary contact, diesel mode.
- Separate bypass input.
- Backfeed protection bypass contactor.



Autonomy time in minutes with different types of internal batteries



INGENIO technical data

Rating (kVA)	30	40	50
Nominal power (kW)	27	36	45
UPS dimensions WxDxH (mm)	500x940x1500		
UPS weight (kg)	140	150	190
UPS weight with int. battery (kg)	500	510	550
Battery configuration	Internal or external, 360÷372 cells, VRLA (other options)		
Max autonomy with int. battery 70% load (min)	24	16	12

Input

Connection type	Hardwired 4w (separate bypass input available on request)
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÷65 Hz
Power factor	0.99
Current distortion (THDi)	<3%

Output

Connection type	Hardwired 4w
Nominal voltage	380/400/415 3-phase with neutral
Frequency	50/60 Hz
Voltage regulation	±1% static; dynamic: IEC/EN 62040-3 Class 1
Power factor	up to 0.9, lagging or leading without power derating
Overload capacity	Inverter: 101÷125% for 10 min, 126÷150% for 30 s, >150% for 100 ms, bypass: 150% continuous, 1000% for 1 cycle
Efficiency (AC/AC)*	up to 98%
Classification as per IEC/EN 62040-3	VFI-SS-111

Connectivity and function extensions

Front panel	Graphic display, mimic LED panel and keyboard, local EPO
Remote communication	Included: RS232 card, 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), from ModBus-RTU to PROFIBUS DP adapter; SPDT contact relay board; remote system monitoring panel; UPS managing and server shutdown software
Optional function extension	Isolation transformer; transformers/autotransformers for voltage adjustment; external maintenance bypass; custom battery cabinets; wall-mounted battery fuse switch box; battery thermal probe; parallel kit and load-sync for single UPS

System

Protection degree	IP 20
Colour	RAL 9005
Installation layout	Wall and side by side installation allowed; 50 cm clearance on one side with internal battery

*according to IEC/EN 62040-3

Other features

Environmental

Operating temperature range	0°C ÷ +40°C
Storage temperature range	-10°C ÷ +70°C
Altitude (AMSL)	< 1000 m without power reduction, > 1000 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 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007
Safety	IEC/EN 62040-1
EMC	IEC/EN 62040-2
Environmental aspects	IEC/EN 62040-4
Test and performance	IEC/EN 62040-3 VFI-SS-111
Protection degree	IEC 60529
Marking	CE

INGENIO 30-40-50 kVA series 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
	Backfeed protection bypass contactor	To be fully protected against backfeed energy upon static bypass failure
	Input 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 (wall mounted box)
	Internal battery temperature probe	When the unit has internal batteries, for charging voltage compensation with temperature
	Internal battery + UPS temperature probe	When the unit has internal batteries, for charging voltage compensation with temperature and UPS temperature monitoring
	External battery temperature probe	When the unit has external batteries, for charging voltage compensation with temperature (10 m cable length)
	Dry contact relay 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
	RS485 ModBus-RTU port	To send UPS status to BMS's by RS485 connection and ModBus-RTU protocol. For telemonitoring and teleservice
	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
	Input terminal block for remote EPO	When the Emergency Power Off (EPO) has to be commanded by a remote control button
	When the Emergency Power Off (EPO) has to be commanded by a remote control button	When there is an external maintenance bypass switch, for state monitoring
	Input terminal block for external battery switch auxiliary contact INCLUDED	When there is an external battery switch, for state monitoring
	Input terminal block for diesel mode contact	When battery recharge has to be inhibited over genset operation