INGENIO PLUS

Uninterruptible Power Supply

3-Ph from 30 to 160 kVA

GREEN CONVERSION

Applications

- Small and medium data centres
- Networks and servers
- Industrial control and process automation
- Medical equipment
- Building automation

Highlights

- On-line double conversion
- Transformer free
- Full IGBT technology
- Paralleling up to 960 kVA

BORRI

INGENIO PLUS

Uninterruptible Power Supply

3-Ph from 30 to 160 kVA

Features and benefits

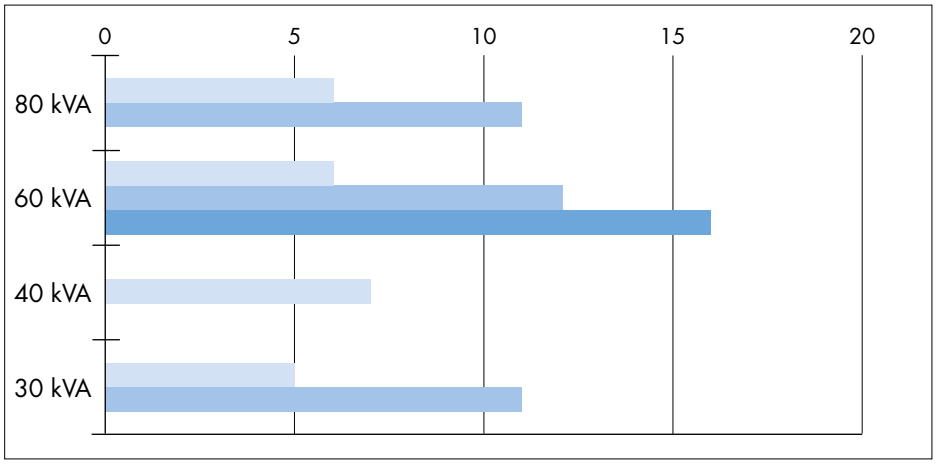
- Green Conversion technology, high efficiency even at light load and the lowest TCO in its category.
- Full rated output power, ensuring optimal UPS sizing and utilization.
- Transformer free design for compact, light and sustainable systems.
- Full IGBT technology and electronic PFC, ensuring 0.99 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.

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 kit for load sharing.
- Load-sync for single UPS units, load-sync box for two sets of paralleled UPS.
- Common battery.
- Tripping coil for bypass disconnector.
- Separate rectifier and bypass input for INGENIO PLUS 30-40 kVA.
- Ultra High Efficiency Mode (UHE).
- Cold start.
- Touch screen display (only on 60-160 kVA range).

GREEN CONVERSION

Autonomy time in minutes with different types of internal batteries



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)	460x650x1230		560x940x1800				
UPS weight (kg)	120	140	250	300	320	360	380
UPS weight with int. battery (kg)	365	385	800	850	-	-	-
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	16	11	-	-	-

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: 125% for 10 min, 150% for 30 s, >150% for 0.1 s; bypass: 150% continuous, 1000% for 1 cycle
Efficiency (AC/AC)**	Up to 99%
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 (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 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, 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 clearance on one side only with internal battery
Accessibility	Front and top access, bottom cable entry	Front access, side access (only with internal battery), bottom cable entry

Other features

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

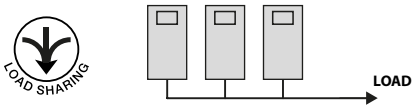
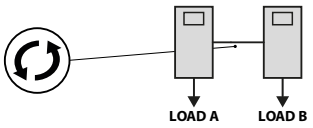
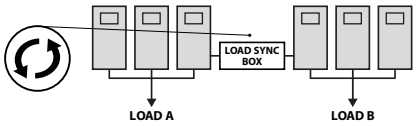
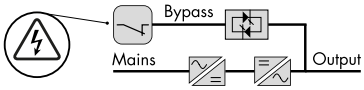
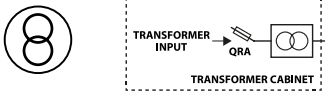
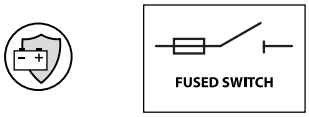
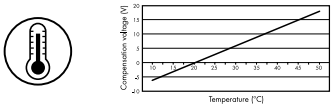
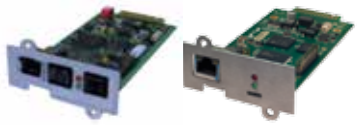
Environmental

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 9001:2008, 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
Protection degree	IEC 60529
Marking	CE

INGENIO PLUS 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
	Load-sync box for two sets of paralleled UPS	To synchronize the output of two paralleled UPS systems for no-break load transfers by downstream static transfer switches
	Tripping coil for bypass disconnector	To be fully protected against backfeed energy upon static bypass failure. Detection circuit is included
	Input transformer to be installed internally or in extended cabinet	To galvanically isolate UPS from load or to change system's earth arrangement
	Battery fuse switch in wall-mounted box	To disconnect and protect an external battery pack
	Internal battery temperature probe	When the unit has internal batteries, for charging voltage compensation with temperature
	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 (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
	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 diesel mode contact	When battery recharge has to be inhibited over genset operation