Standalone three-phase UPS system

PowerWave 33
60–500 kW
Unmatched power performance

Power and productivity
for a better world™

PowerWave 33 – the powerhouse

ABB has always set global standards in uninterruptible-power-supply solutions. The latest generation of PowerWave 33 is the continuation of ABB's renowned tradition of developing state-of-the-art UPS systems, focusing on delivering the best combination of energy-efficiency and overall power performance in the industry.

Offering maximum power protection, the PowerWave 33 helps you to use less energy and takes up less space, resulting in significant cost savings.

The PowerWave 33's exceptional design meets all modern requirements of building and operating energy-efficient and environmentally friendly data centers. The PowerWave 33 employs transformerless double conversion UPS topology and is available from 60 to 500 kVA.

The PowerWave 33 boasts features and options that cater to customers' needs, including the flexibility to accommodate an increase in power requirements and to provide n+1 parallel redundancy. Easy installation and maintenance form the basis of the core design for this standalone UPS system with front access to electrical connections and fully serviceable components.

Further highlights

- Up to 96 % efficiency in double conversion mode minimizes running costs
- Maximized output active power (kVA = kW)
- Excellent input performance minimizes installation costs
- Power density up to 363 kW / m^2 minimizes space requirements
- Full front access maximizes system serviceability

PowerWave 33 (500 kVA)

96 %
AC-AC efficiency

1.0
Output power factor

Fully scalable
up to 5 MW

High efficiency and lowest total cost of ownership

Power performance, which is measured by system-efficiency, input THDi and input and output power factor is the foundation of the PowerWave 33. In the normal online double conversion mode, the PowerWave 33 delivers class-leading efficiency of up to 96 percent.

Efficiency

With a transformerless design and Energy Saving Inverter Switching (ESIS) technology, the PowerWave 33 delivers high efficiency at partial and full load (up to 96 percent in double conversion online mode). This level of efficiency dramatically reduces the total cost of ownership of the UPS system during its life cycle. In addition to lower operating costs, the PowerWave 33 extends the service life of components, thereby greatly increasing overall power performance.

Low input current total harmonic distortion (THDi)

The PowerWave 33 actively manages the input current total harmonic distortion (THDi) at a low level (3.5 percent at 100 percent load). ABB's unique technology neutralizes the emission of harmonics at the input of the UPS system, providing greater reliability of operations for circuit breakers and extending the overall service life of the equipment. Low harmonic distortion saves unnecessary oversizing of gensets, cabling and circuit breakers, avoids extra heating of input transformers and extends the overall service life of all upstream components.

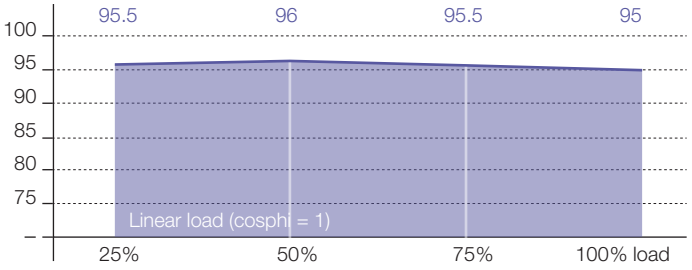
Near-to-unity input power factor

Thanks to the near-to-unity input power factor of 0.99, even with partial loads, the PowerWave 33 reduces the input installation costs by enabling the use of smaller cables. Furthermore it avoids the unnecessary use of additional phase compensating devices, which consequently keeps the overall UPS-efficiency high.

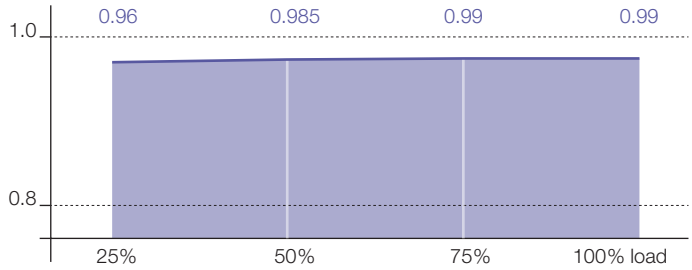
Fully rated output power

The PowerWave 33 can supply loads from 0.9 leading to 0.9 lagging without derating.

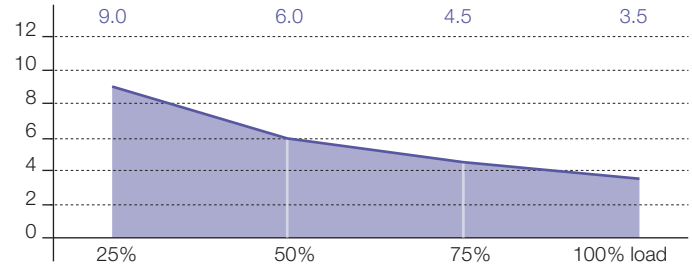
AC-AC efficiency



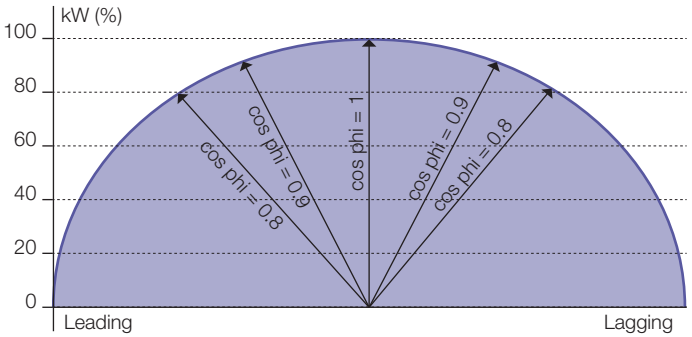
Input power factor versus load



Input current total harmonic distortion (THDi)



Fully rated output power



Technical specifications

GENERAL DATA	60 kW	80 kW	100 kW	120 kW	160 kW	200 kW	250kW	300 kW	400 kW	500 kW
Output power max.	60 kW	80 kW	100 kW	120 kW	160 kW	200 kW	250 kW	300 kW	400 kW	500 kW
Output power factor	1.0									
Topology	True online double conversion									
Parallel configuration	Up to 10 units									
UPS type	Standalone									
Cable entry	Bottom front								Bottom front or top	
Inbuilt batteries	Optional									
INPUT										
Nominal input voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N									
Voltage tolerance (Ref. to 3 × 400 / 230 V)	For loads < 100 % (–23 %, +15 %), < 80 % (–30 %, +15 %), < 60 % (–40 %, +15 %)									
Input distortion THDi	≤ 3.5% at 100 %									
Frequency	35–70 Hz									
Power factor	0.99 at 100 % load									
OUTPUT										
Rated output voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N									
Voltage distortion	< 2 %									
Frequency	50 or 60 Hz									
Overload capability	10 min.: up to 125 % or 1 min.: up to 150 %									
Unbalanced load	100 % possible									
Crest factor	3 : 1									
EFFICIENCY										
Overall efficiency	Up to 96 %									
In eco-mode configuration	98 %									
ENVIRONMENT										
Storage temperature	–25–70 °C									
Operating temperature	0–40 °C									
Altitude configuration	1000 m without derating									
BATTERY										
Battery type	Sealed, lead-acid, maintenance-free or NiCd									
COMMUNICATIONS										
LCD display	Yes									
LEDs	LED for notification and alarm									
Communication ports	USB, RS-232, SNMP slot, potential-free contacts									
STANDARDS										
Safety	IEC / EN 62040-1-1, IEC / EN 60950-1									
Electromagnetic compatibility (EMC)	IEC / EN 62040-2, IEC / EN 61000-3-2 IEC / EN 61000-3-3, IEC / EN 61000-6-2									
Performance	IEC / EN 62040-3									
Product certification	CE									
Protection rating	IP 20									
Manufacturing	ISO 9001:2008, ISO 14001:2004									
WEIGHT, DIMENSIONS										
Weight (without batteries)	230 kg	240 kg	245 kg	280 kg	290 kg	310 kg	390 kg	410 kg	950 kg	1000 kg
Dimensions W × H × D (mm)	550 × 1820 × 750				850 × 1820 × 750		1100 × 1920 × 750		1650 × 1994 × 850	
Dimensions with battery enclosures W × H × D (mm)	970 (or 1180) × 1820 × 750			–			–		–	

Solution flexibility

Product types	60–100 kW	60–100 kW	120–200 kW	250–300 kW	400–500 kW
Included battery enclosure	No	Yes, battery enclosure type A or B	No	No	No
Dimensions W x H x D (mm)	550 x 1820 x 750	970 x 1820 x 750 or 1180 x 1820 x 750	850 x 1820 x 750	1100 x 1920 x 750	1650 x 1994 x 850

PowerWave 33 – product range

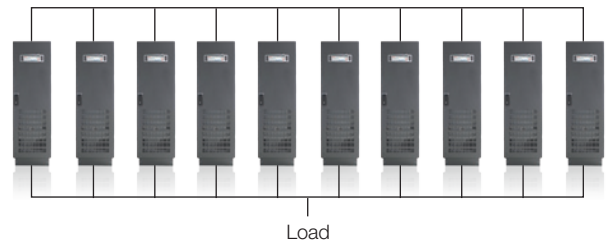
The PowerWave 33 is available in various configurations. The smaller units (60, 80 and 100 kVA) are available with integrated enclosures to accommodate batteries. Front access facilitates installation and servicing of the batteries. To accommodate the batteries for PowerWave 33 units ranging from 120 to 500 kVA, external battery enclosures are required.

Top cable entry option for the 400-500 kVA UPS

Optionally a top cable entry enclosure may be used for the 400-500 kVA UPS. This enclosure extends the overall width of the UPS by 500 mm. It can be positioned on either side of the UPS and permits the connection of all incoming AC/DC power cables from above.

Advanced scalable architecture

If additional capacity or redundancy is needed, up to 10 independent UPS units can operate in parallel configuration, achieving a total power capacity of up to 5000 kVA. In all parallel configurations, each PowerWave 33 unit operates independently but is securely synchronized with the others using the ABB DPA (Decentralized Parallel Architecture). This scalable architecture keeps the purchasing and operating costs of your power protection solutions exceptionally low. As your power requirements grow, the UPS system grows with them – thanks to its flexible scalability – even in the most confined spaces.



Maximum power capacity of up to 5000 kVA (10 UPS in parallel)

Parallel configuration for power extension or redundancy

Contact us

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