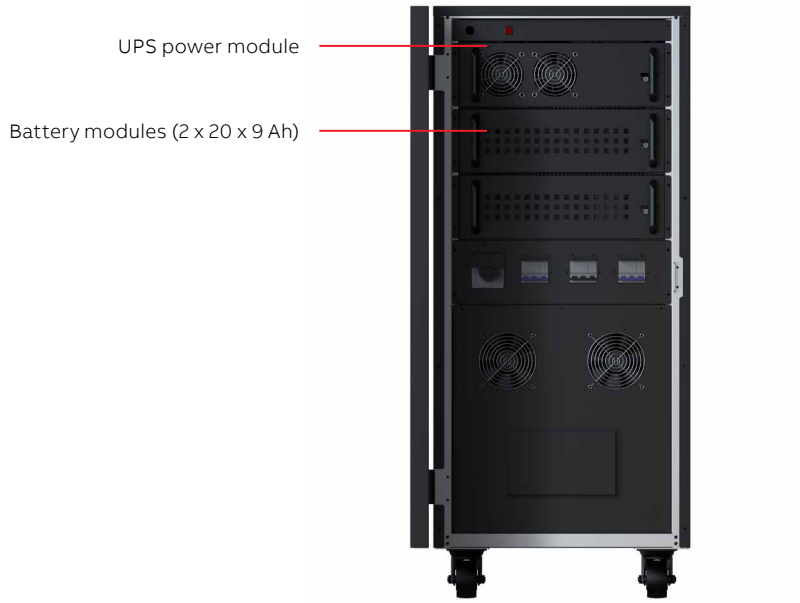
PowerValue 31TX 5-10 kVA IEC

The high-specification single-phase UPS for demanding industrial and business applications



The PowerValue 31TX is ABB's first transformer-based single-phase uninterruptible power supply (UPS) specifically designed to meet the most stringent criteria of applications in industry, business, IT and telecoms.
The PowerValue 31TX delivers reliable power, low running costs, long battery life, easy maintenance and high levels of flexibility.
Featuring a double conversion, voltage and frequency independent (VFI) topology, the PowerValue 31TX covers the 5-10 kVA range. Hardware is included to facilitate the paralleling of up to four systems to provide system redundancy or boost capacity up to 40 kW.
Simple to install and with a small footprint, the PowerValue 31XT provides stable, regulated, transient-free, pure sine wave AC power with extremely tight output voltage regulation.

High reliability and performance
- Online double conversion topology with VFI and 3-ph input/1-ph output
- Optimized for modern loads with unitary-rated output power factor
- Low input line disturbances
- Parallelable up to four units to provide 40 KVA or higher system redundancy
- Regular automatic self-test

Low cost of ownership
- Minimizes energy losses with an efficiency of up to 91%
- High operating efficiency, regardless of loading
- Designed to minimize installation costs

Efficient service concept
- Integrated manual bypass switch
- Easy to install and maintain
- User-replaceable batteries
- Full set of connectivity options for monitoring in a cyber-secure environment
- Easy servicing with front-accessible battery and power modules; front access to MBS and CBs

Flexible design
- All-in-one concept: built-in MBS, circuit breakers, backfeed protection, paralleling hardware, COM interface, batteries
- Compact design gives high power density

PowerValue 31TX
Product features

Compact design
520x746 mm footprint

Ease of service
Only 5 mins for a module replacement

Unitary-rated output power factor
kVA = kW

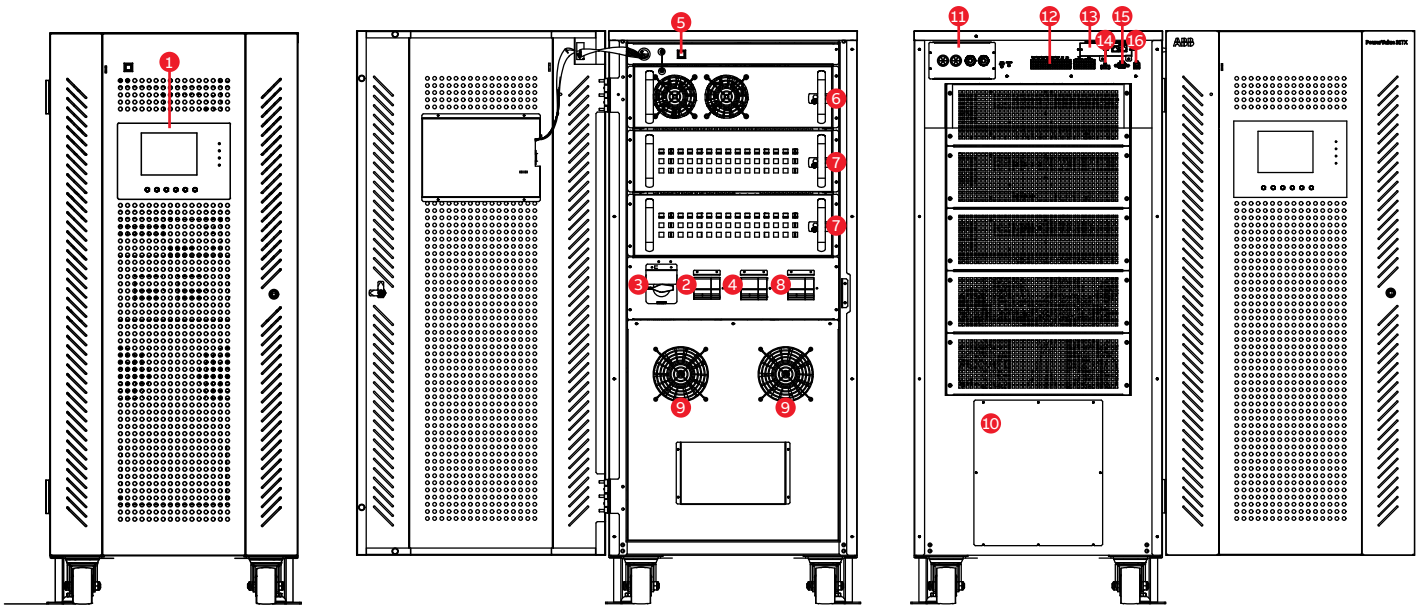
High quality inbuilt transformer
Cu winding provides higher efficiency, less expansion and almost twice current capacity than conventional Alu transformers

Compact power protection up to 40 kVA
- PowerValue 31XT UPSs can be installed in parallel to increase the total system power up to 40 kVA or add redundancy to the system. The UPSs are delivered as standard with the necessary inbuilt parallel board and paralleling cables; no additional hardware is required
- With a compact footprint of just 520 x 746 mm, the PowerValue 31TX delivers high power density
- The two battery modules (2 x 20 x 9 Ah) are delivered mounted in the frame. There is a specific power module for each UPS size

Frequency conversion
- Operating as a frequency converter, the PowerValue 31TX not only converts the power supply frequency (50 Hz to / from 60 Hz), but it also protects the load from power disturbances and guarantees additional battery power in case of mains failure.
- Installation and operation are simple and consist of merely cabling the UPS and selecting the frequency conversion mode on the LCD.
- The PowerValue 31TX has an input frequency tolerance of up to 50% / +36% at <50% load and an output frequency of 50 or 60 Hz can be chosen

Ease of service
- Easy servicing with front-accessible battery and power modules
- Front access to MBS and CBs
- Only 5 mins for a module replacement – considerably shorter than with a traditional UPS
- Comprehensive selection of spare parts available to extend product lifetime
- ABB's global service network can provide round-the-clock cover

UPS cabinet configuration
- True online double conversion UPS
- Optimized for modern loads, with a unitary-rated output power factor (kVA = kW) → +11% active power than a UPS with PF of 0.9
- Minimizes energy losses with an efficiency of up to 91%
- Low input line disturbances: input PF ≥ 0.99 @ 100% linear load – THDi < 6%
- High-quality inbuilt transformer: better-performance copper winding as opposed to cheaper aluminum
- Maximum battery charger current of 4 A, compatible with third-party external battery cabinets
- Long autonomy, 10 mins at full nominal 10 kW load
- Up to four systems in parallel possible for higher system redundancy or boosting capacity up to 40 kW – hardware included
- All-in-one concept: built-in MBS, DC CB, AC input CB, bypass CB, backfeed protection, paralleling hardware, COM interface and batteries
- Large front LCD
- Optimized packaging for harsh transportation and delivery onsite



1 Control panel	**5** Cold start button	**9** AC fan	**13** Intelligent slot
2 Bypass breaker	**6** UPS module	**10** Terminal block	**14** EPO
3 MBS switch	**7** Battery packs	**11** Parallel port	**15** RS-232 port
4 Internal battery breaker	**8** AC input breakers	**12** Dry contact	**16** USB port

SNMP card (WebPro)	ModBus card	AS400 card
		
• ABB CSS compliant • Supports SNMP v3 over TCP/IP • Supports external temperature and humidity sensor (EMD) • Comes with monitoring and remote shutdown software ViewPower (ABB CSS compliant)	• Supports ModBus over RS485	• Provides dry I/O • programmable contacts • (nine pins)

Compatibility

- UPS Watch
- CS141 box (via RS232)
- CS141 slot (via RS232, external enclosure needed)

Options

- Full set of connectivity options for monitoring in a cyber-secure environment
- Network interface cards – control and monitoring of the UPS via a web browser. ModBus over RS485, SNMP, or AS400 (dry contact).
- The SNMP card comes with monitoring and remote shutdown software ViewPower (ABB CSS compliant)

PowerValue 31TX
Technical specification

GENERAL DATA	5 kVA	6 kVA	8 kVA	10 kVA
Output rated power	5 kW	6 kW	8 kW	10 kW
Output power factor	1	1	1	1
Topology	Online double conversion			
Parallel configuration	Up to 4 units			
Inbuilt batteries	Yes	No	Yes	Yes
INPUT				
Nominal input voltage	3x380/220+N 3x400/230+N 3x415/240+N			
Input voltage tolerance	- 20% / +25% at <100% load, - 30% / +25% at <80% load, - 40% / +25% at <70% load, - 50% / +25% at <60% load, - 50% / +36% at <50% load			
Input current THDi	<6% @100% linear load			
Frequency range	46–54 Hz for 50 Hz systems /56–64 Hz for 60 Hz system			
Power factor	≥0.99 @100% load			
OUTPUT				
Rated output voltage	208 VAC(derating 90%)/220VAC/230VAC/240VAC			
Voltage variation	±1%			
Voltage distortion THDu	<2% linear load, <4% non linear load			
Overload capability(linear load) on inverter	40ms: > 150% load; 10s: 130-150% load; 5min: 110-130% load; 30min: 100-110% load			
Nominal frequency	50 Hz or 60 Hz			
Crest factor	3 :1 (load supported)			
EFFICIENCY				
Overall efficiency	Up to 91%			
ENVIRONMENT				
Protection rating	IP 20			
Storage temperature	−15 °C to +60 °C for UPS, 0 °C to approx. +35 °C for battery			
Operating temperature	0 °C to +40 °C			
Relative humidity	0% to 95% (Non-condensing)			
Altitude (above sea level)	1000 m without derating			
BATTERY				
Type	VRLA (vented lead-acid)			
Inbuilt batteries	20x2	20x2	20x2	20x2
Battery capacity	9 Ah	9 Ah	9 Ah	9 Ah
Charging current	4 A	4 A	4 A	4 A
Recharge time	8 h to 90%	8 h to 90%	8 h to 90%	8 h to 90%
COMMUNICATIONS				
User interface	LCD			
Communication cards (option)	Network interface (SNMP card), dry-contact card (AS400)			
STANDARDS				
Safety	IEC / EN 62040-1			
EMC	IEC / EN 62040-2			
Performance	IEC / EN 62040-3			
Manufacturing	ISO 9001:2015, ISO 14001:2015, OHSAS18001			
WEIGHTS, DIMENSIONS				
Weight (with batteries)	286 kg	286 kg	311 kg	311 kg
Dimensions (w × h × d)	520 × 1200 × 746 mm	520 × 1200 × 746 mm	520 × 1200 × 746 mm	520 × 1200 × 746 mm

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