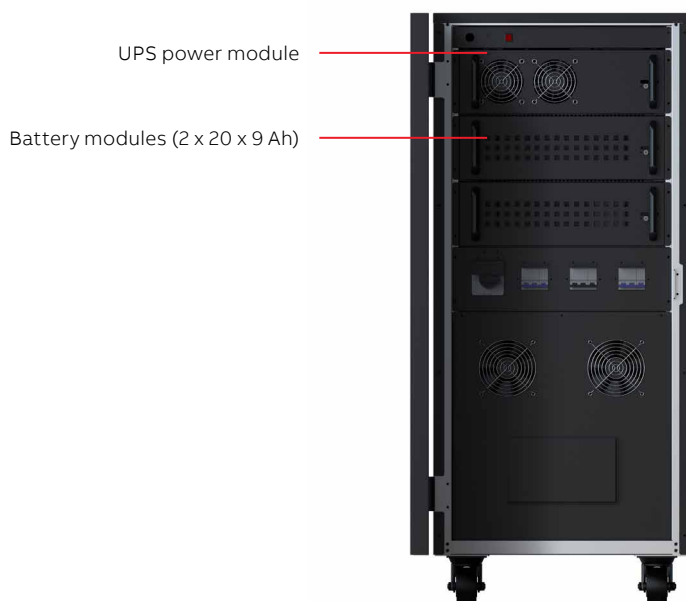


# PowerValue 31TX 5-10 kVA IEC

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 31TX 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 31TX 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

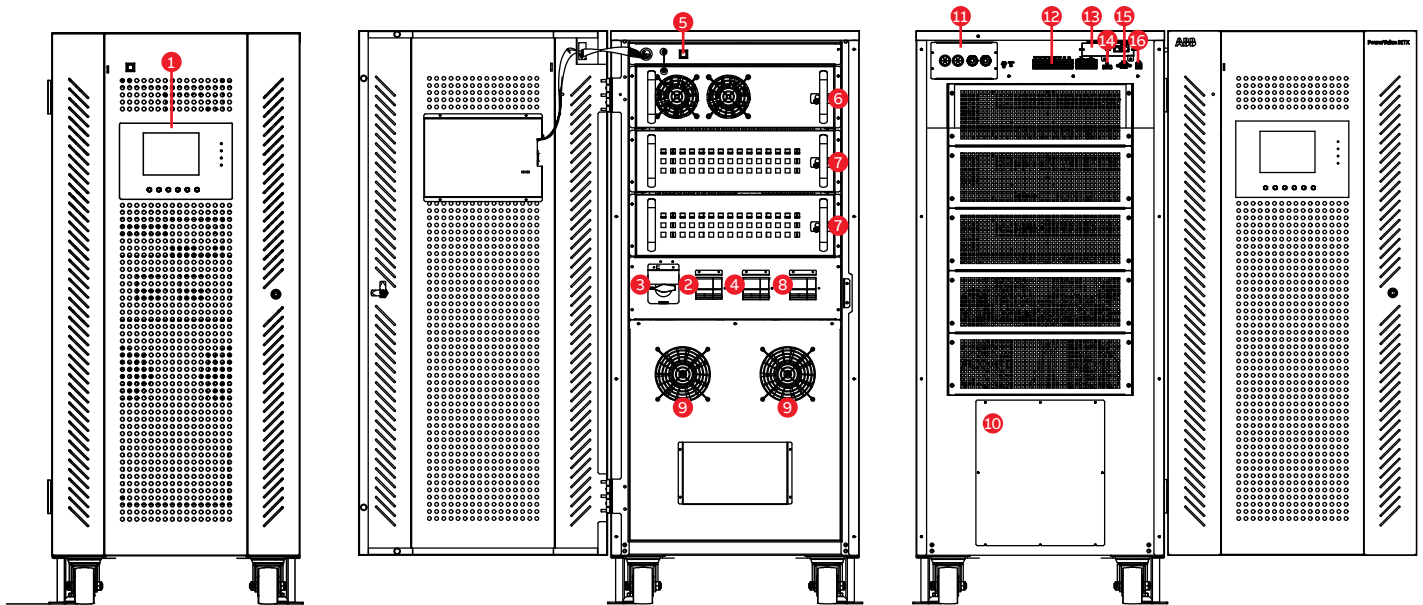
### Ease of service

- 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                                                                                                                                              | 6kVA               | 8kVA               | 10kVA              |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|
| Output rated power                           | 5kW                                                                                                                                                | 6kW                | 8kW                | 10kW               |
| 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<br>3x400/230+N<br>3x415/240+N                                                                                                          |                    |                    |                    |
| Input voltage tolerance                      | - 20% / +25% at <100% load,<br>- 30% / +25% at <80% load,<br>- 40% / +25% at <70% load,<br>- 50% / +25% at <60% load,<br>- 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                            | 50Hz or 60Hz                                                                                                                                       |                    |                    |                    |
| 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)                   | 1000m 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                                | 8h to 90%                                                                                                                                          | 8h to 90%          | 8h to 90%          | 8h 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 × 746mm                                                                                                                                 | 520 × 1200 × 746mm | 520 × 1200 × 746mm | 520 × 1200 × 746mm |