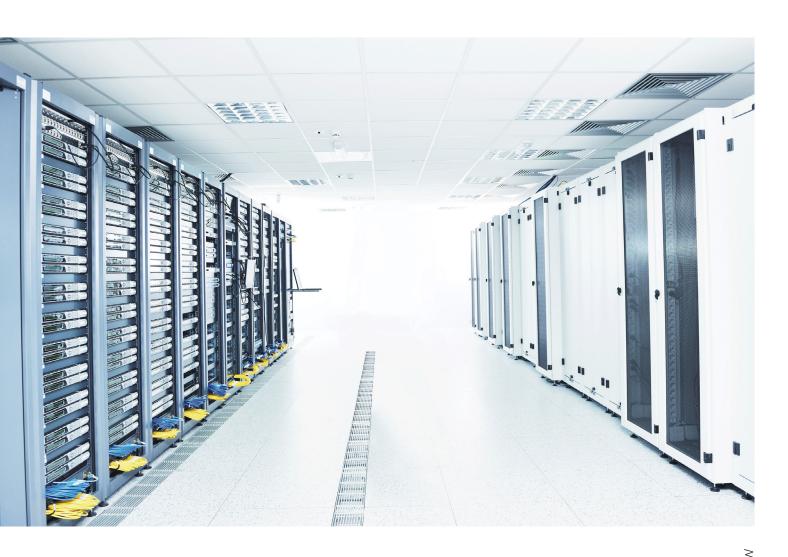


MODULAR THREE-PHASE UPS SYSTEM

### DPA 500 100 kW-3 MW

The modular UPS – now up to 3 MW



## The UPS for those who need zero downtime

ABB's DPA 500 is a high-power, modular and transformer-free UPS system for organizations who need zero downtime. The UPS is built using true online double conversion technology and provides low cost of ownership.

#### True modularity up to 3MW

Now you can have a UPS size to exactly fit your needs: The DPA 500 is the only modular UPS on the market that can easily be scaled up to provide 3MW of clean, reliable power.

This scalability means that there is no need to over-specify the original configuration as power modules can simply be added, as needed, in the future.

#### True parallel architecture

Reliability and availability are ensured by the DPA 500's proven Decentralised Parallel Architecture (DPATM). Each module contains all the hardware and software required for full system operation. They share no common components. Each UPS module has its own independent static bypass, rectifier, inverter, logic control, control panel, battery charger and batteries. With all the critical components duplicated and distributed between individual units, potential single points of failure are eliminated.



Online Swap Modularity

Modules added to expand capacity are available right away – and existing modules remain online throughout the upgrade.

#### Highlights:

- 100 kW rated power module
- 500 kW rated power in single frame
- Extended power range: from 100kW to 3MW
- Unity output power factor (kVA = kW)
- AC-AC efficiency up to 96%
- Efficiency in eco-mode ≥ 99%
- Online Swap Modularity (OSM)
- · Online serviceability
- Top or bottom cable entry (standard)
- Built-in back-feed protection (standard)
- · Graphical display on system level
- DPA diplays in each module
- Maintenance bypass switch (optional)



### The lowest total cost of ownership

The DPA 500 boasts the lowest cost of ownership of any UPS system by offering energy efficiency, scalability and ergonomic design to enable easy serviceability.

It can be sized to align closely with prevailing IT requirements, but can be added to incrementally as IT needs grow. This means that you only power and cool what you need. The resulting savings in power usage over the service life of the UPS are substantial.

Rack-mounted configurations can be right-sized by inserting or removing 'online-swappable' modules while the systems remain online, enabling power to be added as requirements grow without any footprint penalty. This makes servicing simple as modules can be replaced without powering down.

Together with the excellent efficiency rating (up to 96%) of the product, all these factors gives the DPA 500 the lowest total cost of ownership of any similar UPS system.



frames in parallel can be scaled to provide 3 MW of clean and reliable power.

#### Sized to fit your needs

Designers often over-specify UPS systems to take account of future demand growth. With the DPA 500, modules can simply be added in parallel to increase the system's total capacity. The DPA delivers power protection from 100 to 500 kW (one to five modules) in a single cabinet. Cabinets can operate in a parallel configuration to build a system of up to 3MW.

The DPA 500's horizontal and vertical scalability

- Flexible power upgrades and downgrades
- · Easy maintenance
- Pay as you grow

#### Scalable up to 3 MW

Vertical scalability: one to five modules in one single cabinet



Horizontal scalability: cabinets in parallel configuration up to 3 MW



#### Protecting power has never been easier

True, online-swap modularity enables the safe removal and / or insertion of DPA modules without risk to the critical load and without the need to power down or transfer to raw mains supply. This unique feature directly addresses today's requirement for continuous uptime. The ability to online-swap modules in a DPA system significantly reduces its mean time to repair (MTTR) and simplifies system upgrades. The modular approach pays off too when it comes to serviceability and availability – online swapping of modules means you don't have to switch off or switch to bypass during replacements, so there is no downtime.

Installation and service is easy too: The straightforward concept of the DPA simplifies every step of the deployment process, from planning, through installation and commissioning to full use. Flexible set-up and fast maintenance means lower operating and maintenance costs. The UPS is fully front serviceable.

01 Online-swappable modules.

02 Every UPS module has a separate display. Additionally, a touchscreen display on the system level offers the opportunity of directly monitoring key functions. With both displays in place (module and system level), the UPS offers full user friendliness without making compromises on robustness.

#### **Availability**

Mean time between failures (MTBF) and mean time to repair (MTTR) are common parameters in the UPS industry and both impact system availability. Modular UPS designs minimizes the system's MTTR. ABB's Decentralised Parallel Architecture allows the modules to work as one system but without interdependence. In the unlikely event that one UPS module were to fail, the overall system will continue to operate normally, but with one module fewer of capacity. The failed module is fully disconnected and cannot impact the operating modules. Quick and simple repair by swapping modules, which can be held as spares on-site or at a nearby service center, minimizes the system's MTTR. This online-swap technology, along with significant reductions in repair time, can also achieve the so-called six nines availability (99.9999 percent) - highly desirable for data centers in pursuit of zero downtime. Not only does this improve availability but it also reduces cost as service engineers spend less time on-site and any risks of data or production loss are minimized. Inventory levels of specialist spare parts are reduced.



#### High efficiency

The scalability of the modular architecture can deliver major reductions in electricity consumption and CO2 emissions. Not only that, but a class-leading energy efficiency of up to 96% significantly reduces system running costs and cooling costs. But, more importantly, the efficiency is optimized with a very flat efficiency curve that enables significant savings under every working condition.





# Uninterrupted uptime for Tier IV Data Centers

01 Reference example of a data center application:

The system flexibility allows upgrading or downgrading power capacity according to your needs.

02 Extra modules can be added while the system is powered up to make it up to 3 MW. Our modern society is now largely built on a foundation of data. Health authorities, banks, government departments, retail outlets and almost every other organization that touches our lives rely on the safe storage of enormous amounts of data. And safe data storage needs a rock-solid supply of power such as that shown in this reference example.

In a Tier 4 data center, it must be possible to undertake infrastructure work without

disrupting the critical load. This requires simultaneously active distribution paths, typically in a system+system configuration. Electrically, this means two separate UPS systems in which each system has N+1 redundancy. The sample reference scenario, 1200 kW Tier 4, illustrates one possible example of how the DPA 500 can be used to create a high-performance IT infrastructure.

01

UPS System B 4 x 300 kW

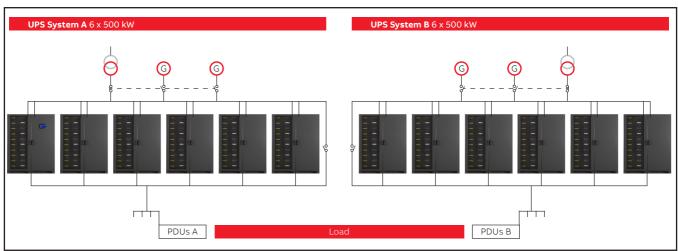
UPS System B 4 x 300 kW

PDUs A

Load

PDUs B

02



## **Technical specifications**

System power range	GENERAL DATA	
Nominal power frame         500kW           Output power factor         1.0           Topology         Double conversion, transformer-free, modular, Decentralized Parallel Architecture           Parallel configuration         Up to 5 modules in one frame (\$50kW) / up to 6 frames in parallel (3MW)           Cable entry         B action or to pa a standard           Serviceability         Fully front serviceable           Back-feed protection         Built-in as standard           Nemonal input voltage         3x 380/220 v + N, 3x 400/230 v + N, 3x 415/240 v + N           Voltage tolerance (referred to 400/230 v)         For loads = 100 % (-10 %, +15 %), < 80 % (-20 %, +15 %), < 60 % (-30 %, +15 %)           Input distortion ThDI         < 3.5 % at 100 % load           Frequency range         35 – 70 Hz           Power factor         0.99 @ 100 % load           Walk in / Soft start         Yes           OUTPUT           Rated output voltage         3x 380/220 V + N, 3x 400/230 V + N, 3x 415/240 V + N           Voltage citorenace (referred to 400/230 V)         < 2 % with linear load / < 4 % with non-linear load           Frequency         So or 60Hz (selectable)           EFFICIENCY           AC-AC         Up to 96%           In accomplete to a support of 10 color (selectable)           PEFICIENCY	System power range	100 kW – 3 MW
Output power factor         1.0           Topology         Double conversion, transformer-free, modular, Decentralized Parallel Architecture           Parallel configuration         Up to 5 modules in one frame (500kW) / up to 6 frames in parallel (3MW)           Cable entry         Bottom or top as standard           Serviceability         Fully front serviceable           Back-feed protection         Built-in as standard           INPUT         Nominal injust voltage           Nominal injust voltage         3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N           Voltage tolerance (referred to 400/230 V)         For loads s 100 % (-10 %, +15 %), < 80 % (-20 %, +15 %), < 60 % (-30 %, +15 %) (referred to 400/230 V)	Nominal power/module	100kW
Topology         Double conversion, transformer-free, modular, Decentralized Parallel Architecture           Parallel configuration         Up to 5 modules in one frame (\$00kW) / up to 6 frames in parallel (3 MW)           Cable entry         Bottom or top as standard           Serviceability         Fully front serviceable           Back-feed protection         Built-in as standard           INPUT         Voltage for protection           Nominal input voltage         3x 380 / 220 V + N, 3x 400 / 230 V + N, 3x 415 / 240 V + N           Voltage forearce (referred to 400 / 230 V)         For loads < 100 % (-10 %, +15 %), < 80 % (-20 %, +15 %), < 60 % (-30 %, +15 %)           Using for factor         0.99 @ 100 % load           Walk in / Soft start         Yes           OUTPUT         Rated output voltage         3x 380 / 220 V + N, 3x 400 / 230 V + N, 3x 415 / 240 V + N           Noltage folerance (referred to 400 / 230 V)         \$1 % with static load / ≤ 4% with steep load (referred to 400 / 230 V)           Voltage distortion         < 2% with linear load / ≤ 4% with non-linear load           Frequency         So of 6Hz (selectable)           EMPICIENCY         Voltage close name as expected as (-25 - 70°           Operating temperature         0 ~ 25 - 70°           Operating temperature         0 ~ 25 - 70°           Operating temperature         0 ~ 25 - 70°	Nominal power/frame	500kW
Parallel configuration         Up to 5 modules in one frame (500 kW) / up to 6 frames in parallel (3 MW)           Cable entry         Bottom or top as standard           Serviceability         Fully fronts serviceable           Back-feed protection         Bull-tin as standard           INPUT         Nominal input voltage         3x 380 / 220 V + N, 3x 400 / 230 V + N, 3x 415 / 240 V + N           Voltage tolerance (referred to 400 / 230 V)         For loads < 100 % (~10 %, +15 %), < 80 % (~20 %, +15 %), < 60 % (~30 %, +15 %) (referred to 400 / 230 V)           Input distortion THDI         4.3.5 % at 100 % load           Frequency range         35 ~ 70 Hz           Power factor         0.99 @ 100 % load           Walk in / 5 oft start         Yes           OUTPUT         Ves           Rated output voltage         3x 380 / 220 V + N, 3x 400 / 230 V + N, 3x 415 / 240 V + N           Voltage tolerance (referred to 400 / 230 V)         *1 % with static load / < 4% with srep load (referred to 400 / 230 V)           Voltage distortion         < 25 % with linear load / < 4% with non-linear load           Frequency         So or 60 Hz (selectable)           EFFICIENCY           AC-AC         Up to 96 %           In eco-mode         2.99 %           ENVIRON         Protection rating         P 20           Storage temperature	Output power factor	1.0
Cable entry         Bottom or top as standard           Serviceability         Fully front serviceable           Back-feed protection         Built-in as standard           INPUT           Wonlage for protection         Suilt-in as standard           Undiage for protection         For loads < 100 % (~10 %, +15 %), < 80 % (~20 %, +15 %), < 60 % (~30 %, +15 %)           Unique distort on THDI         3.5 % at 100 % load           Prequency range         35 ~70 Hz           Power factor         0.99 @ 100% load           Walkin in/ Soft start         Yes           UTPUT         Valuage for stant         Yes           OUTPUT         Valuage for stant         Yes           Voltage of store and (referred to 400 /230 V)         3.3 80 /220 V + N, 3.440 /230 V + N, 3.4415 /240 V + N           Voltage distortion         < 2% with linear load / < 4% with non-linear load           Frequency         50 or 60 Hz (selectable)           Frequency         50 or 60 Hz (selectable)           FFICIENCY         Valuage distortion         < 2% with linear load / < 4% with non-linear load           Frequency         50 or 60 Hz (selectable)         Fermionaria load / < 4% with non-linear load           Frequency         50 or 60 Hz (selectable)         Fermionaria load / < 4% with non-linear load           Frequency	Topology	Double conversion, transformer-free, modular, Decentralized Parallel Architecture
Serviceability         Fully front serviceable           Back-feed protection         Bull-in as standard           INPUT           Nominal input voltage         3 x380/220 V + N, 3 x400/230 V + N, 3 x415/240 V + N           Voltage tolerance (referred to 400/230 V)         For loads < 100 % (~10 %, +15 %), < 80 % (~20 %, +15 %), < 60 % (~30 %, +15 %)           Frequency range         35 ~70 Hz           Power factor         0.99 @ 100 % load           Walk in / Soft start         ves           OUTPUT           Rated output voltage         3 x380/220 V + N, 3 x400/230 V + N, 3 x415/240 V + N           Voltage tolerance (referred to 400/230 V)         < 11 % with static load/< 24 % with step load (referred to 400/230 V)           Voltage distortion         < 2 % with linear load / 4 % with non-linear load           Frequency         50 or 60Hz (selectable) 4           Voltage stortion         2 % 9%           In eco-mode         2 99 %           ENVIRONIENT         Protection rating         P 20           Storage temperature         -25 * +70°           Operating temperature         -25 * +70°           Portection rating         Fexible number from 40 – 50 blocks           Types         VRLA, vented lead-acid, NICd           Batter yearshaper         Caption of the service of cone per frame	Parallel configuration	Up to 5 modules in one frame (500 kW) / up to 6 frames in parallel (3 MW)
Back-feed protection   Built-in as standard	Cable entry	Bottom or top as standard
NPUT   Nominal input voltage	Serviceability	Fully front serviceable
Nominal input voltage         3 x380/220 V + N, 3 x400/230 V + N, 3 x415/240 V + N           Voltage tolerance (referred to 400/230 V)         Fo loads < 100 % (-10 %, +15 %), < 80 % (-20 %, +15 %), < 60 % (-30 %, +15 %)	Back-feed protection	Built-in as standard
Voltage tolerance (referred to 400/230 V)         For loads < 100 % (-10 %, +15 %), < 80 % (-20 %, +15 %), < 60 % (-30 %, +15 %)           Input distortion THDi         < 3.5 % at 100 % load           Frequency range         35-70 Hz           Owner factor         0.99 @ 100 % load           Walk in / Soft start         Yes           OUTPUT         Value           Rated output voltage         3 x 380/220 V + N, 3 x 400/230 V + N, 3 x 415/240 V + N           Voltage tolerance (referred to 400/230 V)         41 % with static load / < 44 % with neal poad (referred to 400/230 V)           Voltage distortion         < 2 % with linear load / < 4 % with non-linear load           Frequency         50 or 60 Hz (selectable)           EFFICIENCY         Value           AC-AC         Up to 96 %           In eco-mode         2 99 %           ENVIRONMENT         Value           ENVIRONMENT         Protection rating         IP 20           Storage temperature         -25° + 70°           Operating temperature         -25° + 470°           Operating temperature         -25° + 470°           Storage temperature         -25° + 470°           Operating temperature         -25° + 470°           Sultitude (above sea level)         100 on without de-rating           BALTERINE	INPUT	
Input distortion THDI	Nominal input voltage	3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N
Frequency range         35-70 Hz           Power factor         0.99 @ 100% load           Walk in /Soft stat         Yes           OUTPUT           Rated output voltage         3380/220 V+ N, 3x400/230 V+ N, 3x415/240 V+ N           Voltage tolerance (referred to 400/230 V)         <1% with static load / <4% with step load	5	For loads < 100 % (–10 %, +15 %), < 80 % (–20 %, +15 %), < 60 % (–30 %, +15 %)
Power factor         0.99 @ 100% load           Walk in/Soft start         Yes           OUTPUT           Rated output voltage         3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N           Voltage tolerance (referred to 400/230 V)         *11 % with static load / *14% with step load (referred to 400/230 V)           Voltage distortion         <2% with linear load/< 4% with non-linear load           Frequency         50 or 60 Hz (selectable)           EFFICIENCY         ***           AC-AC         Up to 96 %           In eco-mode         ≥ 99 %           ENVIRONMENT         ***           Frotection rating         IP 20           Storage temperature         -25° + 70°           Operating temperature         0° + 40°C           Altitude (above sea level)         1000 m without de-rating           BATTERIES         ***           Number of 12V blocks/string         Flexible number from 40-50 blocks           Types         VRLA, vented lead-acid, Nicd           Battery charger         Decentralized charger per module           COMMUNICATIONS           User interface         Graphical touch screen (one per frame as standard)           Communication ports         USB, RS-232, voltage-free contacts, SNIMP (optional)           Customer interface	Input distortion THDi	< 3.5 % at 100 % load
Walk in / Soft start Yes OUTPUT  Rated output voltage 3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N Voltage tolerance (referred to 400/230 V) Voltage distortion <2% with linear load / <4% with step load (referred to 400/230 V) Voltage distortion <2% with linear load / <4% with non-linear load Frequency 50 or 60 Hz (Selectable)  EFFICIENCY  AC-AC Up to 96% In eco-mode 299%  ENVIRONMENT  Protection rating IP 20 Storage temperature 0°-40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Pexible number from 40-50 blocks Types VRLA, vented lead-acid, NICd Battery charge Decentralized charger per module COMMUNICATIONS  Use interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, R5-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLINICY  Safety IEC/EN 62040-3  Manufacturing 150 9001:2015, 150 14001:2015, OH5A518001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Frequency range	35-70Hz
OUTPUT           Rated output voltage         3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N           Voltage tolerance (referred to 400/230 V)         <11% with static load/<14% with step load	Power factor	0.99 @ 100 % load
Rated output voltage 3x380/220 V+ N, 3x400/230 V + N, 3x415/240 V + N  Voltage tolerance (referred to 400/230 V)  Voltage distortion < 2% with linear load/< 4% with step load (referred to 400/230 V)  Voltage distortion < 2% with linear load/< 4% with non-linear load  Frequency 50 or 60 Hz (selectable)  EFFICIENCY  AC-AC Up to 96% In eco-mode ≥ 99%  ENVIRONMENT  Protection rating IP 20  Storage temperature -25° +70°  Operating temperature 0° -40°C  Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks/string Flexible number from 40 – 50 blocks  Types VRLA, vented lead-acid, Nicd  Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) COMPLIANCY  Safety IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC/EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  Weight approx. 975 kg (500 kW system without batteries)	Walk in / Soft start	Yes
Voltage tolerance (referred to 400/230 V)  Voltage distortion <2% with linear load /<4% with non-linear load  Frequency 50 or 60 Hz (selectable)  EFFICIENCY  AC-AC Up to 96% In eco-mode 299%  ENVIRONMENT  Protection rating IP 20  Storage temperature -25°+70° Operating temperature 0°+40°C Altitude (above sea level) 1000m without de-rating  BATTERIES  Number of 12V blocks/string Flexible number from 40-50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) COMPLIANCY  Safety IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC/EN 62040-3  Manufacturing i ISO 9001:2015, ISO 14001:2015, OHSAS18001  Weight approx. 975 kg (500kW system without batteries)	OUTPUT	
(referred to 400/230 V)           Voltage distortion         < 2% with linear load / < 4% with non-linear load	Rated output voltage	3x380/220 V + N, 3x400/230 V + N, 3x415/240 V + N
Frequency 50 or 60 Hz (selectable)  EFFICIENCY  AC-AC Up to 96 % In eco-mode ≥99 %  ENVIRONMENT  Protection rating IP 20  Storage temperature -25°-+70° Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40-50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  Weight approx. 975kg (500 kW system without batteries)	5	< ±1% with static load / < ±4% with step load
EFFICIENCY  AC-AC Up to 96% In eco-mode ≥99%  ENVIRONMENT  Protection rating IP 20  Storage temperature -25° - +70° Operating temperature 0° - +40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40−50 blocks Typess VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Voltage distortion	<2% with linear load / <4% with non-linear load
AC-AC Up to 96% In eco-mode ≥99%  ENVIRONMENT  Protection rating IP 20  Storage temperature -25°-+70° Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40−50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Frequency	50 or 60 Hz (selectable)
In eco-mode \$\( 2\) 99%  ENVIRONMENT  Protection rating IP 20 Storage temperature -25°-+70° Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40-50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC/EN 62040-1 EMC IEC/EN 62040-2 Performance IEC/EN 62040-3 Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975kg (500kW system without batteries)	EFFICIENCY	
ENVIRONMENT  Protection rating IP 20  Storage temperature -25°-+70°  Operating temperature 0°-+40°C  Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40-50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC/EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975kg (500kW system without batteries)	AC-AC	Up to 96%
Protection rating IP 20 Storage temperature -25°-+70° Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES Number of 12V blocks/string Flexible number from 40-50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  EMC IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	In eco-mode	≥ 99%
Storage temperature -25°-+70° Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40–50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500kW system without batteries)	ENVIRONMENT	
Operating temperature 0°-+40°C Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40–50 blocks Types VRLA, vented lead-acid, NiCd Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975kg (500kW system without batteries)	Protection rating	IP 20
Altitude (above sea level) 1000 m without de-rating  BATTERIES  Number of 12V blocks / string Flexible number from 40–50 blocks  Types VRLA, vented lead-acid, NiCd  Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard)  Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Storage temperature	-25°-+70°
BATTERIES  Number of 12V blocks / string Flexible number from 40–50 blocks  Types VRLA, vented lead-acid, NiCd  Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard)  Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500kW system without batteries)	Operating temperature	0°-+40°C
Number of 12V blocks / string Flexible number from 40 – 50 blocks  Types VRLA, vented lead-acid, NiCd  Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard)  Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Altitude (above sea level)	1000 m without de-rating
Types VRLA, vented lead-acid, NiCd  Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard)  Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC/EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	BATTERIES	
Battery charger Decentralized charger per module  COMMUNICATIONS  User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC/EN 62040-1  EMC IEC/EN 62040-2  Performance IEC/EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Number of 12V blocks / string	Flexible number from 40–50 blocks
User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard) Communication ports USB, RS-232, voltage-free contacts, SNMP (optional) Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY Safety IEC / EN 62040-1 EMC IEC / EN 62040-2 Performance IEC / EN 62040-3 Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Types	VRLA, vented lead-acid, NiCd
User interface Graphical touch screen (one per frame as standard) Decentralized LCD + mimic diagram (one per module as standard)  Communication ports USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Battery charger	Decentralized charger per module
Decentralized LCD + mimic diagram (one per module as standard)  Communication ports  USB, RS-232, voltage-free contacts, SNMP (optional)  Customer interface  Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety  IEC / EN 62040-1  EMC  IEC / EN 62040-2  Performance  IEC / EN 62040-3  Manufacturing  ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight  approx. 975 kg (500 kW system without batteries)	COMMUNICATIONS	
Customer interface Remote shutdown, gen-set interface, external bypass contact  COMPLIANCY  Safety IEC / EN 62040-1  EMC IEC / EN 62040-2  Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	User interface	
COMPLIANCY           Safety         IEC / EN 62040-1           EMC         IEC / EN 62040-2           Performance         IEC / EN 62040-3           Manufacturing         ISO 9001:2015, ISO 14001:2015, OHSAS18001           WEIGHT, DIMENSIONS           Weight         approx. 975 kg (500 kW system without batteries)	Communication ports	USB, RS-232, voltage-free contacts, SNMP (optional)
Safety         IEC / EN 62040-1           EMC         IEC / EN 62040-2           Performance         IEC / EN 62040-3           Manufacturing         ISO 9001:2015, ISO 14001:2015, OHSAS18001           WEIGHT, DIMENSIONS           Weight         approx. 975 kg (500 kW system without batteries)	Customer interface	Remote shutdown, gen-set interface, external bypass contact
EMC         IEC / EN 62040-2           Performance         IEC / EN 62040-3           Manufacturing         ISO 9001:2015, ISO 14001:2015, OHSAS18001           WEIGHT, DIMENSIONS           Weight         approx. 975 kg (500 kW system without batteries)	COMPLIANCY	
Performance IEC / EN 62040-3  Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	Safety	IEC/EN 62040-1
Manufacturing ISO 9001:2015, ISO 14001:2015, OHSAS18001  WEIGHT, DIMENSIONS  Weight approx. 975 kg (500 kW system without batteries)	EMC	IEC/EN 62040-2
WEIGHT, DIMENSIONS Weight approx. 975 kg (500 kW system without batteries)	Performance	IEC/EN 62040-3
Weight approx. 975 kg (500 kW system without batteries)	Manufacturing	ISO 9001:2015, ISO 14001:2015, OHSAS18001
	WEIGHT, DIMENSIONS	
Dimensions WxHxD 1580x1975x945mm	Weight	approx. 975kg (500kW system without batteries)
	Dimensions WxHxD	1580x1975x945mm



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