

PROTECT^{PLUS} S500

From 250 to 600 kVA
3-phase transformer-less UPS
with 3 level IGBT technology

High performance, reliability and flexibility
for critical applications



Protect Plus S500 is a monolithic transformer-less UPS that combines high AC/AC efficiency with compact footprint and flexible configurations. Its high level of performance, wide range of options and minimized operating costs, makes it the perfect solution to backup any business-critical load.

Thanks to its **full IGBT double conversion technology** (VFI SS 111), Protect Plus S500 combines low input THDi with almost unity input power factor. The system can operate also in Eco Mode and Smart Eco Mode efficiency then reaching up to 99%, which reduces the energy costs associated. Using Protect Plus S500 also means decreasing the production of waste heat and minimizing the air conditioning costs. This results in significant cost savings and contributes to reducing the carbon footprint of the installation.

The system is an ideal backup power solution for medium and large critical applications where the power consumption, the footprint and the maintainability are key factors.

The UPS can be wall-mounted or installed side by side or back to back.

Typical applications

- Transportation
- Building facilities
- Manufacturing
- Water infrastructures
- Healthcare
- Data centres

* Conditions apply

FEATURES

- Input PF >0.99 and THDi <3%*
- AC/AC efficiency up to 99% in ECO mode*
- Output PF up to 1 (kVA=kW) and load PF range between 0.5 inductive and 0.5 capacitive without derating
- Up to 8 units in parallel
- Static and maintenance bypass lines and switches always included
- Up to 125% of permanent overload capability through the static bypass line
- Dry contacts board (settable and pre-defined contacts both in input and output), Modbus (via RS232/485), free slot for SNMP card
- 7" color touch screen display
- Compatible with VRLA and Li-ion batteries
- Battery strings settable from 32 to 44 VRLA battery blocks (12V each)*
- Common battery string(s) configurable (with two UPS in parallel)
- Frequency converter mode available*
- Wide range of options: load bus synchronization, battery temperature sensor, IP21/31 enclosure, bottom cable entry, external battery switch, SNMP communication card
- Operating temperature up to 40 °C (can tolerate up to 50 °C with power derating)

BENEFITS

- **Easy installation, operation and maintenance:** front access to the main components, for easy maintenance or inspection. Parallel upgrade is easy and simply requires a signal cable
- **Maximized savings** in terms of footprint (m²), power installed (kVA), electrical system (cabling and protection devices) and power management (kW and cost)
- **Low input THDi and PF>0.99:** no additional power-consuming input filters needed
- **Smart ECO mode:** when the bypass voltage and frequency are within the predefined range, the inverter will operate in parallel with the static bypass line, for the harmonic compensation and PF correction, while the static bypass will be connected to the load
- **Intelligent Test Mode:** This mode will let the UPS to be tested directly onsite during the commissioning or the preventive maintenance operations, without using external dummy loads, thus saving money and energy from the mains utility

Specifications

POWER RATING MODEL (KVA)	250	300	400	500	600
Nominal active Power (kW)	250	300	400	500	600
Dimensions W x D x H (mm)	1000 x 900 x 1950			1400 x 900 x 1950	
Weight (kg)	750	750	750	1100	1100
MAINS INPUT LINE (RECTIFIER)					
Phases	3Ph + N + G				
Nominal Voltage (V)	380 / 400 / 415				
Voltage range (V)	380 VAC (-15% to +25% at full load) 400 VAC (-20% to +20% at full load) 415 VAC (-20% to +15% at full load)				
Frequency (Hz)	50 / 60 (also settable as frequency converter)				
Frequency range	40 to 70				
Power Factor	> 0,99				
Input THDi (at rated voltage and THDv < 0,5%)	< 3% (with full linear load)				
BYPASS INPUT LINE					
Nominal Bypass Input Voltage (V)	380 / 400 / 415				
Bypass Input Voltage Range	-25% / +20%				
Bypass Input Frequency (Hz)	50 / 60				
Bypass Frequency Range (Hz)	Nominal: ±10%				
Overload capacity through bypass line	Up to 125% of load: continuously 125% to 150% of load: 10 min 151% to 170% of load: 1 min 1000% of load: 10 ms*				
OUTPUT LINE (INVERTER)					
Voltage (V)	380 / 400 / 415				
Output THDv (according to IEC EN 62040-3)	< 1% (with linear load) < 3% (with non linear load)				
Transient Response	±5% for dynamic step load (20% - 100% -20%)				
Output PF	From PF 0.5 inductive to 0.5 capacitive Up to 1 (0-35°C); up to 0.9 (0-40°C)				
Crest Factor	3:1				
Overload capacity through inverter line	Up to 125% for 10 min Up to 150% for 60 s > 151% for 1 s				
Short circuit current	Ph-Ph: 200% In for 200 ms Ph-N: 250% In for 200 ms				
AC/AC efficiency in double conversion at nominal resistive load	95,2%	95,4%	95,7%	95,7%	95,7%
AC/AC efficiency in Eco Mode	Up to > 99% (at nominal load)				
AC/AC efficiency in Smart Eco Mode	Up to > 98% (at nominal load)				
BATTERY LINE (VRLA BATTERY BLOCKS)					
Nominal DC Voltage (VDC)	480 (with +/- connections)				
Quantity of lead acid batteries (12V each)	Default value: 40 Settable range (without PF derating): 38-44 Settable range (with PF derating to 0.8): 32-44				
Recharge current range (A)	25-100	25-100	25-100	25-100	25-100
USER INTERFACE					
Display	7" Color touch screen display				
Standard communication ports	RS232, RS485 (Modbus), Dry contacts, EPO, Diesel generator interface				
Optional communication ports	SNMP card				
GENERAL					
Protection degree	IP 20 Optional: IP21 and IP31				
Color	RAL 9005				
Operating temperature (°C)	0 to 40 (and up to 50° with power derating, conditions to apply)				
Storage temperature (°C)	-25 to 55				
Relative humidity	0 to 95%				
Altitude (above sea level) (m)	< 1500 (with power derating of 0,5% every 100 m up to 3000 m, according to IEC EN 62040-3)				
Noise at 1 m distance (dB)	< 75				
STANDARDS AND CERTIFICATIONS					
Marking and certifications	CE, UKCA				
Safety	IEC EN 62040-1				
EMC	IEC EN 62040-2				
Test and Performance	IEC EN 62040-3				

AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on: www.aegps.com

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