

PROTECT D

Single phase in/out UPS system

1000 – 10000 VA power supply
with integrated batteries



VFI

Efficient high-performance UPS for rack use

With a high power factor of 0.9 the Protect D series exceeds the power of conventional UPS systems by 20%. Efficiency is significantly increased during normal operation as well as in the energy-efficient ECO and ECO+ operating modes.

Compact and flexible

The height of the UPS electronics and battery together is only 2 U. The autonomy times can be increased with additional battery packs; connected battery packs are automatically detected. Our advanced battery charging technology allows for short charging times and battery-preserving charging characteristics at the same time.

A real-time event logger ensures careful observation and analysis of events as they occur. In addition, a regular automated battery test can be planned.

Typical applications

- IT rooms and other rack applications

FEATURES

- VFI topology (online/double conversion) protects against all network problems
- An increase of the available performance by approx. 20% through a 0.9 power factor
- Increased efficiency through the ECO and ECO+ mode
- Advanced battery charging technology for maximum durability of the battery
- Additional battery packs for easy scaling of the autonomy times
- Extension slot for communication cards; communication in parallel is possible through the RS232 / USB interface and SNMP
- Low height (2 U) including integrated batteries
- Switchable UPS outputs with innovative locking mechanism
- Display of the UPS parameters on a graphic LCD, direct configuration is possible with the control panel
- Freely programmable potential-free contact plus emergency shutdown contact

BENEFITS

- Hot-swappable batteries, easy replacement through hinged front
- Several interfaces (RS232 / USB / Slot / EPO) as well as a potential free contact within the series ensure an outstanding communication capacity
- Innovative locking mechanism at the UPS outputs prevents accidental separation of the loads
- Multilingual graphic screen is very easy to read thanks to its large format
- The UPS can be directly administered with the control panel
- May also be used as a frequency converter

Specifications

PROTECT D 1000, D 1500, D 2000, D 3000

CLASSIFICATION VFI SS 111 ACC. TO IEC 62040-3	D 1000	D 1500	D 2000	D 3000
Power type rating	1000 VA	1500 VA	2000 VA	3000 VA
	900 W	1350 W	1800 W	2700 W
Part number UPS	600 002 4427	600 002 4429	600 002 4432	600 002 4433
Part number battery pack	600 002 4434	600 002 4435	600 002 4436	600 002 4436
UPS INPUT				
Input voltage	208 VAC / 220 VAC / 230 VAC / 240 VAC			
Voltage range without battery mode (load dependent)	120 – 276 VAC		120 – 276 VAC	
Frequency (auto selection)	50 Hz / 60 Hz ±5 Hz			
Input power factor / (THDi)	≥0.99 (THDi < 5%)			
Current consumption at nominal load (max.)	4.5 A	6.8 A	8.8 A	13.7 A
UPS OUTPUT				
Rated output voltage (adjustable)	208 VAC / 220 VAC / 230 VAC (default) / 240 VAC ±2%			
Frequency in battery / frequency converter mode	50 Hz / 60 Hz ±0.25 Hz			
Nominal output current (at 230 VAC)	4.3 A	6.5 A	8.7 A	13 A
Transfer time at mains outage	0 ms (without interruption)			
Voltage waveform	Sinusoidal, distortion THD <3%			
Overload response (double conversion mode)	<130% for 12 s / 130% – 150% for 1.5 s / > 150% for 100 ms			
Overload response (battery mode)	<130% for 12 s / 130% – 150% for 1.5 s / > 150% for 100 ms			
Crest factor	3 : 1			
Short circuit response	Inverter limits the current within 120ms			
BATTERY				
Type	Sealed, maintenance free (proprietary brand), integrated, hot swappable			
Rated voltage (linked)	36 VDC	48 VDC		72 VDC
Battery management	Temperature compensated with discharge protection, automatic battery test (programmable) and battery pack detection			
Charging time (to 90% rated capacity)	3h			
COMMUNICATION				
Interfaces (dual monitoring)	RS232, USB, communication slot (can be used in parallel with RS232 / USB), Input contact for emergency shutdown, programmable potential free contact			
Shutdown software (on CD)	5 network licenses for all common OS (e.g. Windows, Linux, Mac, Unix, Sun etc.)			
Failure indication (acoustic / visual)	Failure indicators (acoustic / visual) 3 LED's with traffic light display, detailed indication via LCD display (alarms: at mains failure, overload, battery charging, battery replacement, fan fault, data logger – with clear text display incl. date and time history)			
GENERAL DATA				
Efficiency (ECO+ mode)	>95%			
Efficiency at nominal load (double conversion mode)	≥88%	>89%	>89%	≥92%
Audible noise (1m distance)	<45 dB(A)	<50 dB(A)		<50 dB(A)
Operating temperature range	0 – 40%			
Humidity	0 – 95% (without condensation)			
Operation altitude	Up to 3000 m at nominal load			
EMC conformity	EN 62040-2 Class C1, EN 61000-3-2, EN 61000-3-3			
Product safety	IEC 60950-1 / IEC 62040-1-1			
Number of outputs (switchable) automatically locked	8 x IEC 320 C13		8 x IEC 320 C13	8 x IEC 320 C13 + 1 x IEC 320 C19
Dimensions approx. W x H x D (mm) UPS	482.6 (19") x 88 (2 U) x 430		482.6 (19") x 88 (2 U) x 600	
Dimensions approx. W x H x D (mm) battery	482.6 (19") x 88 (2 U) x 430		482.6 (19") x 88 (2 U) x 600	
Weight approx. UPS incl. integrated battery	16 kg	19.5 kg	19 kg	29.5 kg
Weight approx. battery extension unit	23 kg	28 kg	28 kg	41 kg
Shipment	Mains input cord (EU), communications USB cable, operating & safety instructions, 1 x IEC device connection cable			
Conformity	CE			



PROTECT D 6000 / 10000

Top performance in rack format

Protect D 6000 and D 10000 compliment the range of the successful Protect D series. With Protect D 10000, a power level of 10 kVA in rack design is available for the first time. Protect D 6000 and Protect D 10000 have the same advantages and characteristics as the smaller models, including the high power factor of 0.9.

Compact housing dimensions

Thanks to their compact design, the devices can also be used in IT cabinets with a depth of only 800 mm. Protect D 6000 including battery, connection unit and manual bypass unit fits within 3 standard height units.

The 10 kVA version, with a complete battery system, connection unit and integrated manual maintenance bypass fits within 5 standard height units.

The sophisticated design with removable connection unit and battery systems with plug-in technology make the assembly in the rack and the electrical installation as easy as possible. The weight is unimportant as the batteries can be mounted at the end of the installation.

Flexible and maintenance friendly

The equipment offers separate feed for the rectifiers and bypass, Protect D 6000 and 10000 can also be operated with only one feed. Both options are provided to deliver highest flexibility and security.

To increase power or to be able to serve the demand for active redundancy, Protect D 6000 and Protect D 10000 are prepared for parallel operation. In order to ease maintenance work, a manual bypass is already integrated into the removable connection unit.

FEATURES

- Suitable for IT cabinets with a depth of 800 mm
- High power density in a compact housing
- Very easy assembly through removable connection unit and batteries with plug-in technology
- Dual or single input
- Prepared for parallel operation
- Integrated manual maintenance bypass (foolproof operation)

Specifications

PROTECT D 6000, D 10000		
CLASSIFICATION VFI SS 111 ACC. TO IEC 62040-3	D 6000	D 10000
Power type rating (Ready for redundant or increased performance parallel operation)	6000 VA	10000 VA
	5400 W	9000 W
Part number UPS	600 002 5604	600 002 5605
Part number for additional battery pack	600 002 4439	600 002 4440
UPS INPUT		
Input voltage	208 VAC / 220 VAC / 230 VAC / 240 VAC	
Voltage range without battery mode	176 VAC (120 VAC to 50% utilization) – 276 VAC	
Voltage range bypass input	184 – 264 VAC	
Frequency (auto selection)	45-55 Hz / 54-66 Hz (extendable to 40-70 Hz when load < 60%)	
Input power factor / (THDi)	≥0.99 (THDi <5%)	
Current consumption at nominal load (max.)	29 A	47 A
UPS OUTPUT		
Rated output voltage (adjustable)	208 VAC / 220 VAC / 230 VAC (default) / 240 VAC ±1%	
Frequency in battery / frequency converter mode	50 Hz / 60 Hz ±0.5%	
Output current (at 230 VAC)	26 A	43.4 A
Transfer time at mains outage	0 ms (without interruption)	
Voltage waveform	Pure sine wave	
Overload response (double conversion mode)	<125% for 10 min. / 130 – 150% for 30 s, > 150% for 500 ms	
Crest factor	3 : 1	
Short circuit response	Short circuit proof (3 x I _n for 200 ms)	
BATTERY		
Type	Sealed, maintenance free (proprietary brand), integrated, hot swappable	
Rated voltage (linked)	192 VDC	240 VDC
Battery management	Temperature compensated with discharge protection, automatic battery test (programmable) and battery pack detection	
Charging time (to 90% rated capacity)	3 h	
COMMUNICATION		
Interfaces (dual monitoring)	RS232, USB, communication slot (can be used in parallel with RS232 / USB), input contact for emergency shutdown, programmable potential free contact	
Shutdown software (on CD)	5 network licenses for all common OS (e.g. Windows, Linux, Mac, Unix, Sun etc.)	
Failure indicators (acoustic/visual)	3 LED's with traffic light display, detailed indication via LCD display (alarms: at mains failure, overload, battery charging, battery replacement, fan fault, data logger – with clear text display incl. date and time history)	
GENERAL DATA		
Efficiency (ECO mode)	>98%	>98%
Efficiency at nominal load (double conversion mode)	>95%	>95%
Audible noise (1m distance)	<55 dB(A)	<60 dB(A)
Operating temperature range	0° – 40 °C	
Humidity	0 – 95% (without condensation)	
Operation altitude	Up to 1000 m at nominal load	
EMC conformity	EN 62010-2 Class C2	
Product safety	EN 62040-1	
AC input	Permanent connection via terminals. Power PDU from UPS input and output connectors with integrated manual bypass switch. Cable entry possible from top, bottom or rear.	
Number of outputs automatically locked	1 x fixed connection on terminal block plus 2 x IEC 320 C13	
Dimensions approx. W x H x D (mm)	48.6 (19") x 86 (2U) x 573	
Dimensions approx. W x H x D (mm) battery extension unit	48.6 (19") x 129 (3 U) x 595	
Weight approx. without batteries	13 kg	14.7 kg
Weight approx. with batteries	58 kg	75 kg
Weight approx. battery extension unit	44.5 kg	63 kg
Shipment	UPS management software "CompuWatch" 5 network licenses, USB cable, parallel cable, operating instructions	
Conformity	CE	

AEG Power Solutions

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