# PROTECT

## UNINTERRUPTIBLE POWER SUPPLY AND SURGE PROTECTION

AEG
POWER SOLUTIONS

# AEG POWER SOLUTIONS

# THE RIGHT UPS FOR EVERY APPLICATION



**AEG Power Solutions provides tailored solutions to customers' needs for protection against network faults and the problems caused by data loss and downtime costs. We assist our clients in all aspects of securing and controlling their electricity supply.**

## "Plug & Safe" – possibilities

Our product range extends from surge protection for home and office to UPS systems for industry.

We deliver UPS devices for home use, compact rack mounted UPS systems and equipment for small and medium IT concerns and "Plug & Safe" – parallel switching enabled modular UPS systems for data centers and for industry.

## Product Support

AEG Power Solutions is a customer oriented, experienced company that is always there for you. The simple expansion of products, reliable delivery and business oriented service and support packages allows you to realize your individual protection requirements.

Founding of "Allgemeine Elektrizitäts Gesellschaft (AEG)" **1883**

Establishment of the AEG plant in Warstein-Belecke **1945**

Construction of SAFT Power Systems **1947**

DC supply for the German Post Office **1951**

The first performance Thyristors are built in series **1952**

First single-phase power controller for resistive loads **1961**

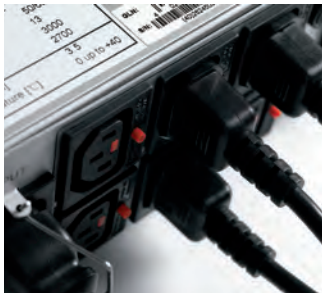
Worlds first single-phase Thyristor inverter **1961**

Worlds first three-phase Thyristor inverter **1965**

For the first time in Europe, bi-directional Thyristors (Triacs) are built **1968**

Development of power controllers **1969**

5/25: First switching power supply **1972**




## Experience and continuity

For over 60 years, AEG Power Solutions has been a leading provider of reliable and efficient power systems for mission critical applications for customers involved in electricity supply, telecommunications, lighting, transportation, manufacturing, renewable energy and industry.

With over 250 engineers, technicians and project managers, AEG Power Solutions are carrying out pioneering work in research and development and in application engineering. As a result of this ingenuity, AEG Power Solutions currently has more than 70 active patents in the field of electricity supply.

## Field service locations worldwide

With 20 branches and over 50 qualified partners, AEG Power Solutions deliver competent service and on-site support to our customers worldwide in 100 countries.

Our technical teams are able to perform complete turnkey projects for our customers.

On request, we can work on projects for electricity supply, from project management planning through to final installation, whether it is a new plant, an expansion or a retro fit out.

Talk to us!

Thyrosoft: First soft starter motor
**1984**

Profitec S: First rectifier with microprocessor
**1985**

First UPS with IGBT transistor (single and three phase)
**1988**

Protect 3.: Worldwide, the first UPS with 100 % digital control
**1995**

Thyro-P: Digital power controller
**1999**

Protect RCS: Rectifier, battery charge and DC power supply for all industrial applications
**2007**

eco$^{PX}$: Hybrid emergency power supply with solar and wind energy
**2009**

Protect PV.250: Solar central inverters with operating efficiency of 98.7 %
**2010**

Thyrobox PI: Power supply system with 10–20 % higher output for polysilicon production
**2010**

Protect Blue: 3 level IGBT (rectifier and inverter) UPS developed specifically for Large Data Centers
**2012**

# PRODUCT OVERVIEW

## SURGE PROTECTION FOR HOME AND SMALL OFFICE

10 Year Warranty

| | page 7 | 7 |
|---|---|---|
| | **PROTECT BASIC** | **PROTECT TRAVEL** |
| | Power strip for all standard applications | Security on the move for safe charging of your devices |
| **Protected sockets** | 6 (GE6) / 7 (GE7) | 1 |
| **Euro-sockets** | | 2 |
| **Power switch** | ■ | |
| **USB charger** | | 2 |
| **Network protection** | | |
| **Sockets with child protection** | ■ | ■ |
| **Special features** | Cable holder (Basic.GE7) | Flexible rotatable power supply |

## COMPACT UPS FOR HOME / SMALL OFFICE / SMB / IT

| | page 12 | 14 |
|---|---|---|
| | **PROTECT HOME** | **PROTECT ALPHA** |
| | Complete protection for multimedia applications | Suitable protection for SoHo applications, telephone equipment, NAS systems, PCs |
| **Output power** | 0.6 kVA | 0.45–1.2 kVA |
| **Technology according to IEC 62040-3** | VFD (offline) | VI (line interactive) |
| **Input/output** | 1 ph~ / 1 ph~ | 1 ph~ / 1 ph~ |
| **Parallel operation** | | |
| **Display** | LED | LED |
| **Battery system** | Internal | Internal |
| **Typical autonomy time (min.)** | 10 | 5–20 |

| | page 20 | 22 |
|---|---|---|
| | **PROTECT C** | **PROTECT C** |
| | Tower UPS for sensitive networks, intranet and internet servers | Tower UPS for sensitive networks, small computer centers |
| **Output power** | 1–3 kVA | 6–10 kVA |
| **Technology according to IEC 62040-3** | VFI (double conversion) | VFI (double conversion) |
| **Input/output** | 1 ph~ / 1 ph~ | 1 ph~ / 1 ph~ |
| **Parallel operation** | No | Yes |
| **Display** | LED & LCD (multilingual) | LED |
| **Battery system** | Internal / External | Internal / External |
| **Typical autonomy time (min.)** | 5–90 | 5–90 |

| | 8 | 8 | 9 | 9 |
|---|---|---|---|---|
| |  |  |  |  |
| | **PROTECT ENTERTAINMENT** | **PROTECT TWINPOWER** | **PROTECT BUSINESS** | **PROTECT OFFICE** |
| | Intelligent protection for entertainment equipment with master-slave function | Security for flexible connectivity and safe power supply | Business solutions with surge protection and USB charger | Compact protection for PC and peripheral equipment |
| | 6 | 4+1 | 6 | 3 |
| | | 2 | | |
| | | ■ | ■ | ■ |
| | | 2 | 2 | 2 |
| | ■ | | ■ | ■ |
| | ■ | ■ | ■ | ■ |
| | Antenna line protection | Two part construction | Foldable construction | Audio connection |

| | 16 | 18 |
|---|---|---|
| |  |  |
| | **PROTECT A** | **PROTECT B. PRO** |
| | Protection for PCs, workstations and telephone equipment | Efficient rack/tower UPS for small server and network components with sinusoidal output |
| | 0.5–1.4 kVA | 0.75–3 kVA |
| | VI (line interactive) | VI (line interactive) |
| | 1 ph~ / 1 ph~ | 1 ph~ / 1 ph~ |
| | | |
| | LED / LCD | LED & LCD |
| | Internal | Internal / External |
| | 10–30 | 10–60 |

| | 24 | 26 | 28 | 30 |
|---|---|---|---|---|
| |  |  |  |  |
| | **PROTECT D** | **PROTECT D** | **PROTECT 1** | **PROTECT 1. M** |
| | Compact UPS for rack mounted protection of server, network and IT equipment | Compact UPS for rack mounted protection of server, network and IT equipment | For small data centers, protection of cash till systems and building facilities | Scalable and modular high-performance UPS system for the IT sector |
| | 1–3 kVA | 6–10 kVA | 10–20 kVA | 4–24 kVA |
| | VFI (double conversion) | VFI (double conversion) | VFI (double conversion) | VFI (double conversion) |
| | 1 ph~ / 1 ph~ | 1 ph~ / 1 ph~ | 3 ph~ / 1 ph~ | 1 ph~ or 3 ph~ / 1 ph~ |
| | No | Yes | Yes | Yes (internal) |
| | LED & LCD (multilingual) | LED & LCD (multilingual) | LED | LED & LCD |
| | Internal / External | Internal / External | External | External |
| | 6–90 | 5–45 | 6–80 | 15–90 |

*For higher power ratings please contact your AEG Power Solutions representative*

SURGE PROTECTION

# WHEN THE VOLTAGE RISES

## High voltage surge – high damage

Over 1.7 million lightning flashes were counted in Germany in 2011. The flash frequency was 0.5 to 10 impacts per $km^2$ per annum. Under unfavorable conditions, electrical surge damage can still occur up to 3 km from the lightning strike.

### Surge protection

Household appliances are becoming more valuable, especially as the number of computers and entertainment electronics continues to rise steadily. Devices are of increasing sophistication and quality and are, therefore, more expensive. When a lightning strike occurs, there is an enormous increase in voltage in power supply lines. This over-voltage or surge, may damage any connected devices, destroying or irreparably damaging them.

Even simple switching of a fluorescent lamp fitted with a conventional ballast starter within a household can generate an unwanted power surge.

A single power surge can cause a loss of several thousand Euros. If only small parts are damaged, the entire system often requires replacing. Even if a repair is possible, it is usually difficult and expensive.

Surge protection solutions from AEG Power Solutions, safeguards your valuable equipment cost effectively and protects you from problems and financial loss.

### Particularly sensitive electronic equipment

- Telephone equipment and routers
- Flat screen TV and LCD screens
- Computers and peripherals
- Satellite receivers
- Games consoles
- Home theater systems

All of our surge protectors are equipped with the latest metal oxide varistors. Connected loads are effectively protected up to 36000 A from impact and current spikes.

While traditional varistors always carried the risk of fire caused by over-voltage, the new generation is characterized by the highest thermal stability, providing an even higher level of protection. This is back up by the KEMA KEUR certificate and the GS seal.

AREAS OF APPLICATION

| | Protect Basic | Protect Travel | Protect Entertainment | Protect TwinPower | Protect Business | Protect Office |
|---|---|---|---|---|---|---|
| Telephone equipment / Router | ■ | ■ | ■ | | ■ | ■ |
| Flat screen TV & receiver | | | | ■ | ■ | |
| Games console | | ■ | ■ | | ■ | ■ |
| Computers & peripherals | | ■ | ■ | ■ | ■ | ■ |
| HiFi equipment & speakers | ■ | | ■ | ■ | | |
| Mobile phones & MP3 players | | ■ | | ■ | ■ | ■ |
| Small household equipment | ■ | | ■ | | ■ | |

# PROTECT BASIC
# PROTECT TRAVEL

*Protect Basic.GE6*

*Protect Basic.GE7*

*Protect Travel*

## Protect Basic

5 outputs provide room for additional standard safety plugs and remote sockets for the connection of larger plug power supplies. Additional filters serve to mitigate high frequency noise. Cable clutter is avoided with the built-in cable holder (GE7).

Operating status and active surge protection are displayed with two LEDs. Via the power switch, the load is disconnected from the network in order to avoid standby power usage.

**Main characteristics**

- 5 sockets plus 1 or 2 remote outputs e.g. for larger power supplies
- Long power cable (1.8 m) with angled plug
- Resettable circuit breaker
- All outputs fitted with child safety protection
- Fixing options for wall mounting
- LEDs indicate operating status and active surge protection
- Surge protection up to 36000 A
- Full 3-line protection
- 10 year warranty

**Part numbers**

- Protect Basic.GE6: 600 000 7194
- Protect Basic.GE7: 600 000 7196
- Protect Basic.FR7 600 000 7198
- Protect Basic.FR6 600 000 7197
- Protect Basic.UK5 600 000 7190

## Protect Travel

Protect Travel provides surge protection in the smallest places. This makes it ideal for trips or for use in confined spaces.

Often the quality of power in your destination country is not sufficient for your secure power requirements. Play it safe and protect laptops, mobile phones and digital cameras on the road against power surges. With the two integrated USB chargers you will save on the need to carry additional chargers with you.

**Main characteristics**

- 3 surge protected load terminals
- 2 remote, protected USB charging sockets
- Pilot light indicates active surge protection
- Compact size, ideal for travel
- 90° swivel cable
- All outputs fitted with child safety protection
- Surge protection up to 36000 A
- 10 year warranty

**Part number**

- Protect Travel: 600 000 7747

*Protect Basic.GE7*
*Integrated cable organizer*

*Protect Travel*
*Compact dimensions*
*ideal for travel bag*

# PROTECT ENTERTAINMENT PROTECT TWINPOWER

10 Year Warranty

*Protect Entertainment*

*Protect TwinPower*

## Protect Entertainment Protection for home entertainment

Protect your valuable investment and save money on standby costs! With its master-slave function, the Protect Entertainment is especially suitable for modern home theater and multi media equipment.

Once you turn off the main unit (master), Protect Entertainment interrupts the power supply to the peripheral devices (slaves) automatically so that no electricity is wasted on standby. Two constant current carrying sockets provide power to devices whose power supply should not be broken e.g. hard disk drives or satellite receivers.

In addition, Protect Entertainment also provides surge protection for antenna and network cables so that all of your entertainment equipment is protected against over voltage.

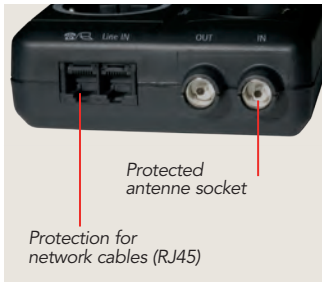
**Main characteristics**

- 1 master and 3 slave sockets, adjustable trigger threshold of master, master-slave function disabled
- 2 permanent electrical outputs
- Over voltage protection for coaxial antenna cables
- Surge protection for network cables (RJ45)
- All outputs fitted with child safety protection
- Surge protection up to 36000 A
- Full 3-line protection
- 10 year warranty

**Part number**

- Protect Entertainment: 600 000 7745

*Protect Entertainment Master-Slave-function switchable so that all outputs deliver power*




*Protect Entertainment*

## Protect TwinPower Security for flexibility in your application

The Protect TwinPower from AEG Power Solutions offers a flexible solution for desktop surge protection. With 7 power outputs, Protect TwinPower offers enough ports for all peripherals connected to a computer. With its two-piece design, the leads are placed in the most flexible position, the first part with 4 sockets e.g. to supply power for computers, printers and monitors and a desk unit with 3 sockets. You can disconnect the remote part of the TwinPower from the grid to avoid standby charges for your connected devices when they are not being used.

With the two protected USB charging sockets you can, for example, charge most mobile phones and MP3 players

**Main characteristics**

- Two part surge protector strip
- Power switch to turn off the remote gang
- A total of 4 + 3 protected outputs
- 2 protected USB charging sockets
- Easily accessible power switch
- All outputs fitted with child safety protection
- Surge protection up to 36000 A
- Full 3-line protection
- 10 year warranty

**Part number**

- Protect TwinPower: 600 000 7749


*Protect TwinPower*

# PROTECT BUSINESS
# PROTECT OFFICE

10 Year Warranty

*Protect Business*

*Protect Office*

## Protect Business
## Space saving business solution

Protect laptops and projectors at conferences.

With its folding mechanism, Protect Business is suitable for use at conferences and on desktops.

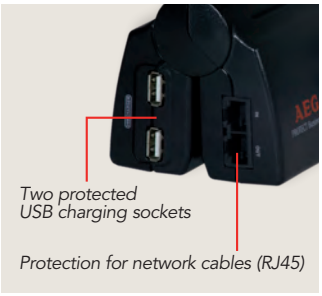
Additionally, it offers surge protection via the two integrated USB charging sockets and the data cable (RJ45) socket.

**Main characteristics**

- 6 protected sockets
- 2 protected USB charging sockets
- Surge protection for network cables (RJ45)
- Foldable design for conference tables
- All outputs fitted with child safety protection
- Surge protection up to 36000 A
- Full triple protection
- 10 year warranty

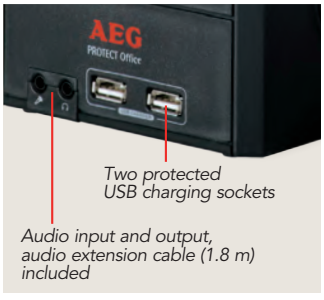
**Part number**

- Protect Business: 600 000 7748




*Protect Business*

*Protect Business*
*Foldable for space saving*




*Protect Office*


*Protect Office*

## Protect Office
## Compact protection for your PC

Protect Office is the compact power distributor for the desktop. The three power outputs and network connections ensure all round protection for your computer.

During development, compact dimensions were always at the forefront. Additionally, you can connect microphones and speakers directly to the Protect Office avoiding the clutter of cables behind and on your desk. With the central power switch, you can turn off peripheral devices and avoid standby power charges.

**Main characteristics**

- 3 protected outputs, one that is rotatable by 90°
- 2 protected USB charging sockets
- Surge protection for network cables (RJ45)
- Additional connection of microphone and speakers, audio extension cable included.
- Surge protection up to 36000 A
- Full triple protection
- 10 year warranty

**Part number**

- Protect Office: 600 000 7746

UPS TECHNOLOGY

# PRECISE PROTECTION FOR EVERY APPLICATION

Mains voltage variations occur more often than expected. The consequences of this are crashes, loss of data and cost intensive downtime. The solution is an uninterruptible power supply (UPS) which offers a variety of levels of protection.

**Uninterruptible power supply**

There are three different UPS topologies offering different protection levels against all types of mains disruption and variation.

## VFD technology

"Voltage and Frequency Dependent" in compliance with IEC 62040-3, also referred to as offline, protects against many problems in your network. Under normal conditions it conducts the input current to its outlet. When the power supply fails it switches over to a built in battery to compensate for any variations in the mains supply.

**Benefits**

- Smallest size
- Highest efficiency
- Lowest operating costs

## VI technology

"Voltage Independent" in compliance with IEC 62040-3, also known as line interactive, protects against the most common power problems experienced in a network. Here the UPS also monitors the voltage level and balances under and over voltages. The VI technology offers a good compromise between reasonable security and moderate operating costs.

**Benefits**

- Extremely wide input voltage window
- Rugged design
- High efficiency
- Low operating costs

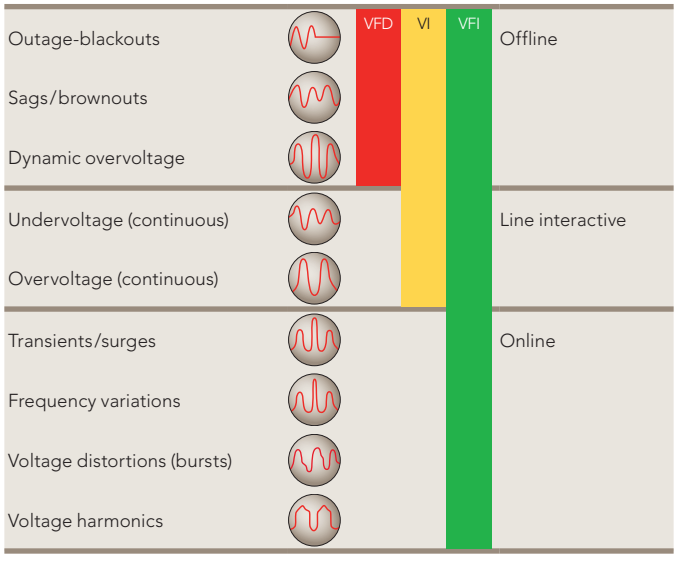
## VFI technology

"Voltage and Frequency Independent" in compliance with IEC 62040-3, as well as online or double conversion offers superior protection against problems in the power supply. Here, the input voltage is fed to a rectifier, with output being supplied by an inverter. Under normal operating conditions, the inverter receives its supply directly from the rectifier, when the power supply fails it is supplied directly from the batteries. Consumers have no direct connection to mains AC power supply; the UPS protects them from all power grid problems.

In critical situations and with sensitive equipment, protection by VFI technology is highly reccomended.

**Benefits**

- Sinusoidal input current and output voltage
- No switching times, therefore no gaps in coverage
- Frequency converter operation possible
- Additional internal redundancy switch over
- Optimum protection against power disturbances




*Optimum protection for every application*

# PROTECT HOME

VFD

## Uninterruptible security for PCs and multimedia

Protect yourself with an uninterruptible power supply against data loss. With an output of 600 VA, Protect Home protects. It measures and protects against the consequences of power outages, voltage fluctuations and dangerous power spikes.

**Appropriate protection**

Protect Home is especially designed for domestic multimedia applications. It provides complete surge protection for telephone, fax and modem.

Consumers are connected directly to protected sockets directly through the UPS.

Protect Home has all of the features that current technology can provide to protect your valuable equipment from short circuit and power overload.

**Easy to use**

The clear "one board" design and LED indicators let you know about the most important operating conditions. This ease of use is complemented by an audible alarm.

**Easy to control**

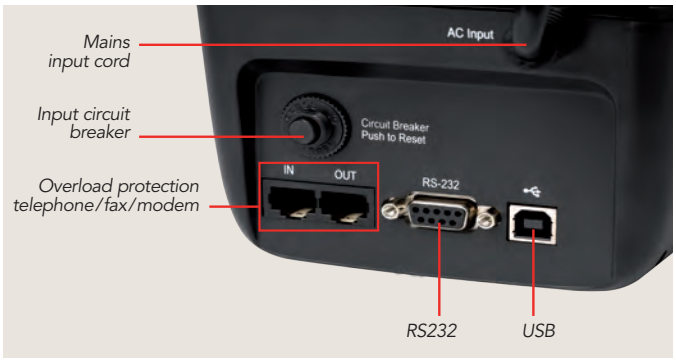
Protect Home can be connected quickly and easily with a PC or Mac via the USB or RS232 interfaces.

Through the included AEG shutdown software "CompuWatch", the unit allows you to control the most important operations as well as providing automatic shutdown during longer power outages.

**Main characteristics**

- Rugged UPS technology for power outages, voltage fluctuations and spikes
- USB and RS232 interface for control and management for PC and Mac
- Fully fledged "CompuWatch" "plug&play" software
- Data line protection (telephone, fax and modem)
- User friendly battery design (access to the battery compartment on the underside of the equipment)
- Individual operation, wall mountable
- 1 output for connecting consumers with high power requirements such as laser printers

Best features:
Comprehensive protection for telephone, fax or modem, USB and serial port for communication with your PC or Mac.



| | |
|---|---|
| **Classification VFD SY 322 acc. to IEC 62040-3** | Protect Home |
| **Power type rating** | 600 VA |
| | 300 W |
| **Part number** | 600 001 1844 (UK)<br>600 001 2013 (FR) |
| UPS INPUT | |
| **Input voltage** | 230 VAC |
| **Voltage range without battery supply** | +6 % / -10 % |
| **Frequency** | 50 Hz / 60 Hz ±5 Hz |
| **Current consumption** | 3 A |
| UPS OUTPUT | |
| **Rated output voltage** | 230 VAC |
| **Rated output voltage in battery mode** | ±10 % |
| **Frequency in battery mode** | 50 Hz / 60 Hz ±1 Hz |
| **Output current** | 2.6 A |
| **Transfer time at mains outage** | 2 – 6 ms (typical) |
| **Voltage waveform** | Modified sine wave |
| **Overload/short circuit protection** | Yes |
| BATTERY | |
| **Type** | Sealed, maintenance free (proprietary brand) |
| **Rated voltage (linked)** | 12 VDC |
| **Autonomy time for 1 PC with 17" TFT** | ~ 10 min. |
| **Overload/deep discharge protection** | Yes |
| **Recharge time (to 90 % of rated capacity)** | 8 h |
| COMMUNICATION | |
| **Interfaces** | USB and RS232 for status and measurement levels |
| **Shutdown software (on CD)** | Included for all mainstream operating systems (e.g. Windows, Linux, Mac) |
| **Failure indicators (acoustic/visual)** | Mains failure, overload, battery low, fault |
| GENERAL DATA | |
| **Audible noise (1 m distance)** | <40 dB(A) (fanless) |
| **Operating temperature range** | 0° – 40°C |
| **Humidity** | 20 – 90 % |
| **Operation altitude** | Up to 1000 m at nominal load |
| **EMC conformity** | EN 62040-2 Class C2, EN 61000-3-2, EN 61000-3-3 |
| **Product safety** | EN 62040-1 |
| **Data line protection** | RJ11 (telephone, fax, modem) |
| **Outputs** | 4 shock proof sockets<br>(4 x surge protection, 3 x UPS protection) |
| **Equipment color** | Blackline, high gloss finish |
| **Dimensions approx. W x H x D (mm)** | 137 x 96 x 310 |
| **Weight approx.** | 3.5 kg |
| **Shipment** | Mains input cord, management software “CompuWatch” (CD),<br>USB and RS232 communication cable, operating instructions |
| **Conformity** | CE |

# PROTECT ALPHA

VI


## Uninterruptible security for applications in the SoHo sector

Protect yourself using an uninterruptible power supply for optimal protection against loss of data wherever you need it. Available in the 450 VA to 1200 VA power range the series stands for solid, yet affordable, protection for numerous applications in the small and home office environment.

Protect alpha uses robust line interactive technology and therefore guarantees a stable power supply to the connected loads over a wide power input voltage range and without strain on the internal battery system.

### Flexibility in our lineup

The fanless design combined with compact dimensions and a low weight are capable of accommodating even the most difficult conditions.

### Easy to use

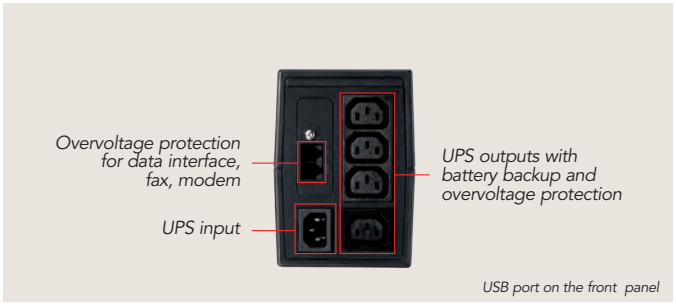
All models are characteristically easy to use and are equipped with an audible alarm and automatic grid frequency detection (50/60 Hz). An LED display on the front panel provides information about the current operating status.

Immediate operational readiness with the supplied cable set contributes to the ease of use.

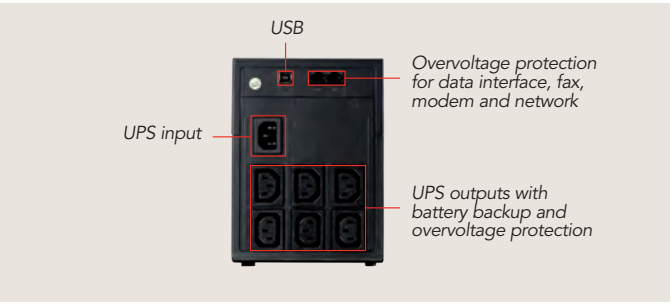
All functions are microprocessor controlled and monitored; measurement values and messages are always available because Protect A communicates via a USB interface to your PC. Through the included AEG shutdown software "CompuWatch", the unit allows you to control the most important operations as well as providing automatic shutdown during longer power outages.

### Main characteristics

- Modern VI (line interactive) technology for power outages and dangerous over voltage
- Automatic voltage regulation against voltage fluctuations (AVR)
- Silent operation due to fanless design
- Easy installation with the supplied cables and easy handling
- Sealed, maintenance-free branded lead acid batteries with discharge protection
- USB interface for PC connection
- Data line protection for telephone, fax and modem (RJ11)
- Compact dimensions, low weight




*Protect alpha 450/600/800 – rear view*




*Protect alpha 1200 – rear view*

| Classification VI SY 322 acc. to IEC 62040-3 | alpha 450 | alpha 600 | alpha 800 | alpha 1200 |
|---|---|---|---|---|
| **Type rating** | 450 VA | 600 VA | 800 VA | 1200 VA |
| | 240 W | 360 W | 480 W | 600 W |
| **Part number** | 600 001 4746 | 600 001 4747 | 600 001 4748 | 600 001 4749 |
| UPS INPUT | | | | |
| **Nominal connection voltage** | 220 VAC / 230 VAC / 240 VAC | | | |
| **Voltage range without battery operation** | 170 – 280 VAC | | | |
| **Frequency (automatic selection)** | 50 Hz / 60 Hz ±5 Hz | | | |
| UPS OUTPUT | | | | |
| **Rated output voltage/AVR technology** | 220 VAC / 230 VAC / 240 VAC | | | |
| **Rated output voltage in battery operation** | ±10 % | | | |
| **Frequency in battery operation** | 50 Hz / 60 Hz ±1 Hz | | | |
| **Nominal output current (at 230 VAC)** | 2 A | 2.6 A | 3.5 A | 5.2 A |
| **Changeover time in the event of mains failure** | 4 – 8 ms (typical) | | | |
| **Voltage curve** | Modified sine wave | | | |
| **Overload protection** | Yes | | | |
| BATTERY | | | | |
| **Type** | Sealed, maintenance free (proprietary brand) | | | |
| **Autonomy time at 120 W** | ~5 min. | ~10 min. | ~15 min. | ~20 min. |
| **Exhaustive discharge protection/ protection against excess load** | Yes | | | |
| **Charging time (to 90 % of rated capacity)** | 6 h | | | |
| COMMUNICATION | | | | |
| **Interfaces** | USB (with status messages and measured values) | | | |
| **Indicator** | AC mode, battery mode | | | mains / battery use failure warning |
| **Audible alarms** | Backup mode, low battery, overload, fault | | | |
| **Status display** | LED display | | | |
| GENERAL DATA | | | | |
| **Inherent noise (1 m distance)** | <40 dB(A) | | | |
| | Fanless | | | |
| **Operating temperature range** | 0° – 40°C | | | |
| **Humidity** | 0 – 90 % (without condensation) | | | |
| **Operation altitude** | Up to 1000 m at nominal load | | | |
| **EMC conformity** | EN 62040-2 class C2, EN 61000-3-2, EN 61000-3-3 | | | |
| **Product safety** | EN 62040-1 | | | |
| **Overvoltage protection for data lines** | RJ11 (phone, fax, modem) | | | |
| **Mains input** | IEC 320 C14 | | | |
| **Load outputs** | 4 x IEC 320 C13 | | | 6 x IEC 320 C13 |
| **Housing color** | Blackline | | | |
| **Dimensions approx. W x H x D (mm)** | 100 x 143 x 278 | | 139 x 195 x 365 | |
| **Weight approx.** | 3.7 kg | 4.4 kg | 5.2 kg | 8.6 kg |
| **Scope of delivery** | Mains connection, management software “CompuWatch” (CD), 1 device connecting cable, 1 USB cable, operating instructions | | | |
| **Conformity** | CE | | | |

# PROTECT A

VI

## Uninterruptible security for PCs, workstations and telephone systems

The Protect A series protects your data efficiently and cost effectively against the consequences of power outages, voltage fluctuations and power surges.

Thanks to the increased range of services it is suitable for consumers with increased input current requirements. The attractive modern design is characterized by the high technical standards that are in place.

Protect A proves itself in critical situations with its high availability thanks to modern line-interactive (VI) technology, robust network overload and surge protection, as well as a very wide power input voltage range.

### Easy to use

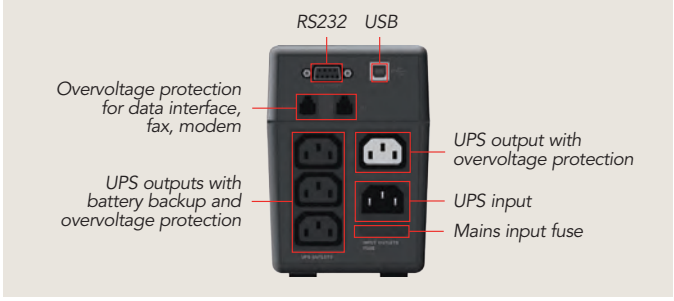
The reliable "one-board design" and the clear LCD display (A. 1000 / A. 1400) on the front clearly informs you about the most important operating conditions. All models benefit from ease of use, an audible alarm and automatic frequency detection (50/60 Hz). Immediate use with the supplied cable set contributes to the ease of use.

### Simple to control

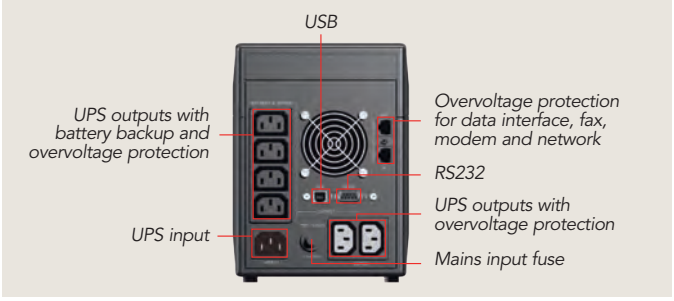
All functions are microprocessor controlled and are constantly monitored as measured values and messages are available at all times because Protect A communicates via RS232 or USB interface to the PC or Mac. The included special AEG "CompuWatch" shutdown software enables the most important operating systems to automatically shut down during longer power failure.

### Main characteristics

- Modern VI (line-interactive) technology for power outages and dangerous over voltage
- Automatic voltage against voltage fluctuations (AVR)
- Double mains filter against voltage spikes
- Easy installation with the supplied cables and easy handling
- Sealed, maintenance-free branded lead acid batteries with discharge protection
- USB and RS232 interface for monitoring and control of PC or Mac
- Data Line Protection
- Connectors (n) for the direct supply of consumers with high power requirements, e.g. laser printer

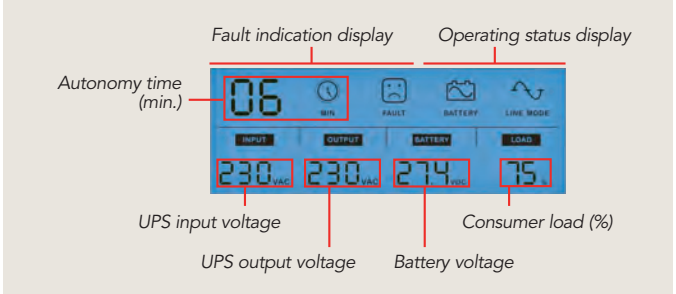



*Protect A. 500 / A. 700 – rear view*




*Protect A. 1000 / A. 1400 – rear view*

| Classification VI SY 322 acc. to IEC 62040-3 | A. 500 | A. 700 | A. 1000 | A. 1400 |
|---|---|---|---|---|
| **Power type rating** | 500 VA | 700 VA | 1000 VA | 1400 VA |
| | 300 W | 420 W | 600 W | 840 W |
| **Part number** | 600 000 6435 | 600 000 6436 | 600 000 6437 | 600 000 6438 |
| UPS INPUT | | | | |
| **Input voltage** | 220 VAC / 230 VAC / 240 VAC | | | |
| **Voltage range without battery mode** | 170 – 280 VAC | | | |
| **Frequency (automatic selection)** | 50 Hz / 60 Hz ±5 Hz | | | |
| UPS OUTPUT | | | | |
| **Rated output voltage/AVR technology** | 220 VAC / 230 VAC / 240 VAC | | | |
| **Rated output in battery mode** | 230 VAC ±10 % | | | |
| **Frequency in battery mode** | 50 Hz / 60 Hz ±1 Hz | | | |
| **Nominal output current (at 230 VAC)** | 2.2 A | 3 A | 4.3 A | 6.1 A |
| **Transfer time at mains outage** | 2 – 6 ms (typical) | | | |
| **Voltage waveform** | Approximated sinusoidal | | | |
| **Overload protection** | Yes | | | |
| BATTERY | | | | |
| **Type** | Sealed, maintenance free (proprietary brand) | | | |
| **Autonomy time (intermediate circuit)** | 12 VDC | | 24 VDC | |
| **Autonomy time for 1 PC with 17" TFT** | ~10 min. | ~15 min. | ~25 min. | ~30 min. |
| **Overload/deep discharge protection** | Yes | | | |
| **Charging time (to 90 % of rated capacity)** | 8 h | | | |
| COMMUNICATION | | | | |
| **Interfaces** | USB and RS232 (with status messages and measured values) | | | |
| **Shutdown software (on CD)** | Included in delivery for all major operating systems (e.g. Windows, Linux, Mac) | | | |
| **Alarm messages (acoustic/visual)** | Mains failure, overload, battery discharged, replace battery, fault | | | |
| | LED Display | | LCD display for input and output voltage [V] / efficiency [%] / autonomy time [min.] | |
| GENERAL DATA | | | | |
| **Audible noise (1 m distance)** | <40 dB(A) | | <45 dB(A) (AC-operation <40 dB(A)) | |
| | Fanless | | Speed controlled fan | |
| **Operating temperature range** | 0° – 40°C | | | |
| **Humidity** | 0 – 90 % (without condensation) | | | |
| **Operation altitude** | Up to 1000 m at nominal load | | | |
| **EMC conformity** | EN 62040-2 Class C2, EN 61000-3-2, EN 61000-3-3 | | | |
| **Product safety** | EN 62040-1 | | | |
| **Data line protection** | RJ11 (telephone, fax, modem) | | RJ11 / RJ45 (add. network), Ethernet 10 and 100 Mbit/s | |
| **Mains input** | IEC 320 C14 | | | |
| **Outputs** | 3 + 1 x IEC 320 C13 | | 4 + 2 x IEC 320 C13 | |
| **Equipment color** | Blackline with silver colored front cover | | | |
| **Dimensions approx. W x H x D (mm)** | 100 x 140 x 330 | | 145 x 205 x 405 | |
| **Weight approx.** | 6 kg | 6.5 kg | 9.5 kg | 10 kg |
| **Shipment** | Mains input cord, 2 device connecting cables, management software "CompuWatch" (CD) incl. 1 network license USB and RS232 communication cable, operating instructions | | | |
| **Conformity** | CE | | | |




*Protect A. 1000 / A. 1400 – display screen*

# PROTECT B. PRO

VI

## Efficient and innovative UPS solutions for servers and networks

With its high power factor of 0.9lag, Protect B. PRO is one of the most efficient systems with VI protection technology.

Many ways of communication are possible, thanks to parallel operation of the RS232 or USB interfaces and the extension slot.

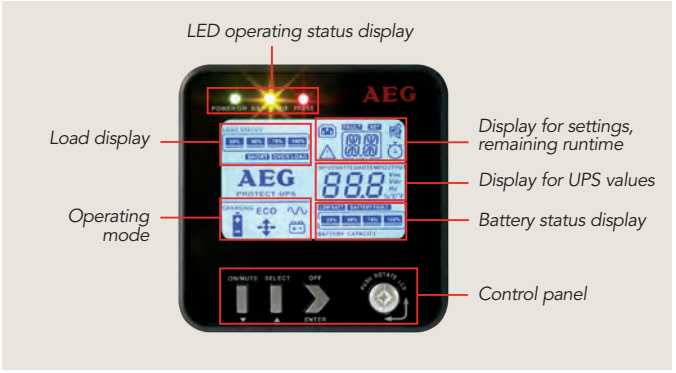
Also, the adaptation of the UPS to the requirements of modern IT environments is reflected by the design. The UPS can be configured directly with the control panel. Batteries can be easily replaced by means of the innovative flap mechanism at the front.

By means of the included accessories and the rotary screen, the UPS can be operated in the rack as well as in the tower mode.

**Main characteristics**

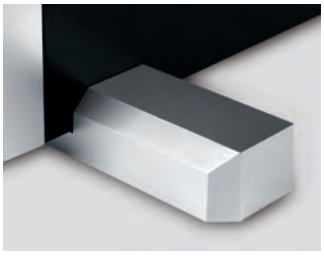
- Modern VI (line interactive) protection technology with sinus-shaped output voltage
- Low operating costs through high efficiency, power factor 0.9lag
- Compact shape, flexible use through combined design tower/rack, rotary screen
- Surge protection (RJ11/RJ45) for telephone, fax, modem and network
- Configuration directly on the LCD
- Full display of the essential parameters on the screen, e.g. the remaining runtime in minutes
- Intelligent monitoring system with USB and RS232 interface; parallel operation of USB/RS232 and extension slot is possible
- Additional battery packs available for B.1000 PRO, B.1800 PRO and B.3000 PRO models for ease of scaling of autonomy times

*Easy battery replacement through front flap*

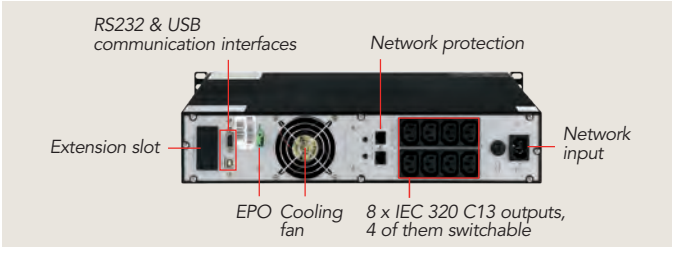



*Protect B. PRO – LCD control panel*

*Rotary screen*



*Included pedestals*

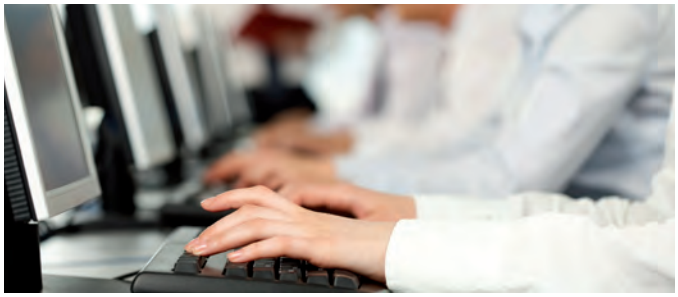



*Protect B. 1000 PRO – rear view*

| Classification VI SS 211 acc. to IEC 62040-3 | B. 750 PRO | B. 1000 PRO | B. 1400 PRO | B. 1800 PRO | B. 2300 PRO | B. 3000 PRO |
|---|---|---|---|---|---|---|
| **Power type rating** | 750 VA | 1000 VA | 1400 VA | 1800 VA | 2300 VA | 3000 VA |
| | 675 W | 900 W | 1260 W | 1620 W | 2070 W | 2700 W |
| **Part number** | 600 000 8422 | 600 001 3872 | 600 000 8426 | 600 001 3873 | 600 000 8431 | 600 001 3875 |
| **Part number (battery pack)** | | 600 001 3876 | | 600 001 3874 | | 600 001 3877 |
| UPS INPUT | | | | | | |
| **Input voltage** | 220 VAC / 230 VAC / 240 VAC | | | | | |
| **Voltage range without battery mode** | ±20 % | | | | | |
| **Frequency (auto selection)** | 50 Hz / 60 Hz ±5 Hz | | | | | |
| **Current consumption at nominal load (max.)** | 4 A | 5.4 A | 7.5 A | 9.7 A | 12.4 A | 16.1 A |
| UPS OUTPUT | | | | | | |
| **Rated output voltage/AVR technology** | 208 VAC / 220 VAC / 230 VAC (default) / 240 VAC ±10 % (±3 % free running) | | | | | |
| **Frequency in battery mode** | 50 Hz / 60 Hz ±1 Hz | | | | | |
| **Output current (at 230 VAC)** | 3.2 A | 4.3 A | 6.1 A | 7.8 A | 10 A | 13 A |
| **Transfer time at mains outage** | 2 – 6 ms (typical), 8 ms max. | | | | | |
| **Voltage waveform** | sinusoidal | | | | | |
| **Overload response (VI operation)** | <120 % for 5 min. / 120 – 150 % for 10 s / >150 % for 1 s | | | | | |
| **Overload response (battery operation)** | <110 % for 1 min. / 110 – 150 % for 10 s / 150 – 200 % for 500 ms | | | | | |
| BATTERY | | | | | | |
| **Type** | Sealed, maintenance free (proprietary brand), hot swappable | | | | | |
| **Integrated** | Yes | | | | | |
| **Rated voltage** | 24 VDC | | 48 VDC | | 72 VDC | |
| **Battery management** | Temperature compensated with overload and deep discharge protection; automatic battery test; battery pack detection | | | | | |
| **Autonomy time in min. (full/half-load, cos φ = 0.7lag)** | 5.5/15 | 5.5/15 | 7/19 | 7/20 | 6/20 | 6/15 |
| **Ditto UPS incl. battery expansion unit** | | 19.5 / 48 | | 23 / 63 | | 21 / 48 |
| **Charging time (to 90 % rated capacity)** | 8 h | | | | | |
| COMMUNICATION | | | | | | |
| **User interface** | LCD display with digital indication of relevant UPS values | | | | | |
| **Interface (dual monitoring)** | RS232 and USB (with status notification and UPS data), additional communication slot in parallel mode (SNMP / relay card); input contact for emergency power off | | | | | |
| **Shutdown software (on CD)** | 5 network licenses for all common OS (e.g. Windows, Linux, Mac) | | | | | |
| **Failure indicators (acoustic/visual)** | 3 LED indicators show UPS status, detailed indication via LCD display (mains failure, overload, battery discharge, battery replace, fan failure) | | | | | |
| GENERAL DATA | | | | | | |
| **Efficiency (in ECO mode)** | >97 % | | | | | |
| **Efficiency (at whole AVR range)** | >90 % | | | | | |
| **Audible noise (1 m distance)** | ≤45 dB(A) | | | | ≤55 dB(A) | |
| **Ditto in ECO mode and max. 70 % load** | ≤40 dB(A) | | | | ≤45 dB(A) | |
| **Operating temperature range** | 0° – 40°C | | | | | |
| **Humidity** | 0 – 90 % (without condensation) | | | | | |
| **Operation altitude** | Up to 1000 m at nominal load | | | | | |
| **EMC conformity** | EN 62040-2 Class C2, EN 61000-3-2, EN 61000-3-3 | | | | | |
| **Product safety** | EN 62040-1 | | | | | |
| **Data line protection** | RJ11 (telephone, fax, modem) / RJ45 (Ethernet 10 Mbit/s / 100 Mbit/s) | | | | | |
| **Mains input** | IEC 320 C14 | | | | IEC 320 C20 | |
| **Number of outputs/ controllable via connectors** | 8/4<br>8 x IEC 320 C13 | | | | 7/3<br>6 x IEC 320 C13, 1 x IEC 320 C19 | |
| **Equipment color** | Black metal case / silver front | | | | | |
| **Dimensions approx. W x H x D (mm)** | 482.6 (19") x 88 (2 U) x 420 | | 482.6 (19") x 88 (2 U) x 520 | | 482.6 (19") x 88 (2 U) x 640 | |
| **Weight approx.** **UPS incl. battery system** | 14.5 kg | 15 kg | 24 kg | 25 kg | 29 kg | 29.5 kg |
| **Battery expansion unit** | | 16 kg | | 26.5 kg | | 39 kg |
| **Shipment** | Mains input cord, 2 x device connection cables (10 A), additional cable (16 A) for Protect B. 2300 PRO and Protect B. 3000 PRO, 2 x mounting brackets, 2 x base feet, 1 x management software "CompuWatch" (CD), 5 network licenses, RS232 and USB cable, operating instructions | | | | | |
| **Conformity** | CE | | | | | |

# PROTECT C

VFI

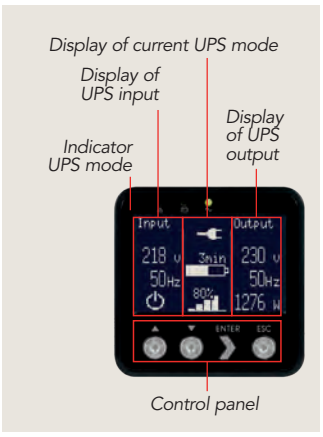


## Uninterruptible security for applications in the SMB sector

Real VFI / double conversion online technology suitable for safe supply application-critical consumers in the IT environment such as workstations, servers, storage systems, as well as in the area of sensitive switching and control systems.

The new Protect C models in the performance levels in 1000, 2000 and 3000 VA range represent consistent further development of the well-proven and highly reliable series.

With the lag increased to 0.8, the power factor was taken into account for the demand for higher performance active consumers. The ECO and frequency inverter for operation mode highlights the requirements for a modern versatile UPS.




*Protect C – LCD & control panel*

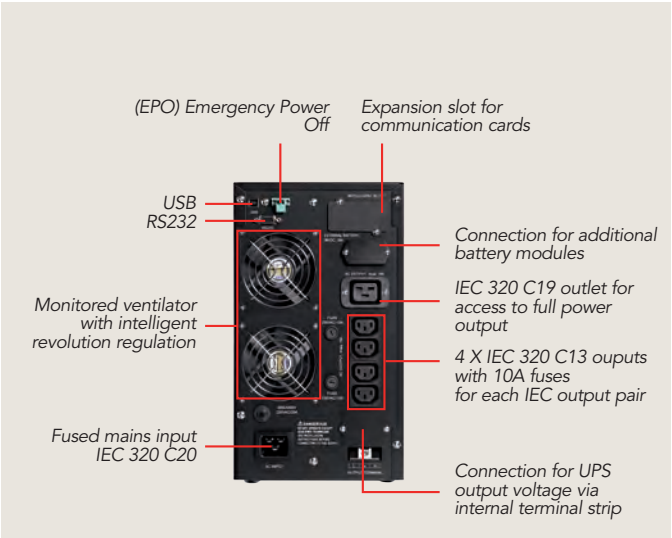
### Optimal control and information

"Dual-monitoring" enabled interfaces extend communication opportunities. The universally usable communication slot also allows for the integration of SNMP network interface cards that allow for monitoring and management options, particularly multi-server shutdown. The AEG "CompuWatch" shutdown software is always included.

The multilingual graphical LCD display provides all the important operating states and values that can be stored and retrieved in addition to real-time data storage in plain text.

### Main characteristics

- VFI topology (online / double conversion) protection against all mains network problems
- Extremely wide input voltage window of 110 VAC to 300 VAC without stress on the internal battery system and with a stable output voltage
- ECO and frequency operating voltage possible
- Expansion slot for SNMP, potential free contacts, remote display
- Graphic LCD display with interactive multilingual user interface
- Configuration options (password protected) via the operator terminal
- Internal hardware data logger with plain text display and date / time stamp
- Emergency power off on terminal block (potential-free)




*Protect C. 3000 – rear view*

| PROTECT C | Autonomy time (full / half load) (min.) | | |
|---|---|---|---|
| **(cos φ = 0.7lag)** | 1000 VA | 2000 VA | 3000 VA |
| **Default autonomy time** | 6/21 | 10/30 | 5/16 |
| **1 additional battery module** | 38/97 | 55/130 | 30/85 |
| **2 additional battery module** | 76/170 | 106/237 | 60/149 |

*Autonomy time – battery units resemble UPS*

| Classification VFI SS 111* acc. to IEC 62040-3 | C. 1000 | C. 2000 | C. 3000 |
|---|---|---|---|
| **Power type rating** | 1000 VA | 2000 VA | 3000 VA |
| | 800 W | 1600 W | 2400 W |
| **Part number (UPS including integrated battery system)** | 600 001 6103 | 600 001 6104 | 600 001 6105 |
| **Part number (additional battery pack)** | 600 001 6106 | 600 001 6107 | |
| **UPS INPUT** | | | |
| **Input voltage** | 220 VAC / 230 VAC / 240 VAC | | |
| **Voltage range without battery mode (load dependent)** | 110 – 300 VAC | | |
| **Frequency (auto selection)** | 50 Hz / 60 Hz ±10 Hz | | |
| **Mains current (system reaction)** | λ ≥0.99 (THDi <5%) | | |
| **Current consumption at nominal load (max.) (at 230 VAC incl. max. battery charging current)** | 4.6 A | 8.5 A | 12.5 A |
| **UPS OUTPUT** | | | |
| **Rated output voltage (adjustable)** | 200 VAC / 208 VAC / 220 VAC / 230 VAC (default setting) / 240 VAC ±2 % | | |
| **Frequency in battery / frequency converter mode** | 50 Hz / 60 Hz ±0.2 Hz | | |
| **Nominal output current (at 230 VAC)** | 4.3 A | 8.7 A | 13 A |
| **Transfer time at mains outage** | 0 ms (without interruption) | | |
| **Voltage waveform** | Sinusoidal, distortion <3 % | | |
| **Overload response (double conversion & battery mode)** | <110 % for 60 s / 110 % up to <125 % for 30s / 125 % up to 150 % for 10s<br>Subsequent, transfer to bypass mode (if bypass available) | | |
| **Crest factor** | 3 : 1 | | |
| **Short circuit response** | Short circuit proof (3 x $I_N$ for 100 ms) | | |
| **BATTERY** | | | |
| **Type** | Sealed, maintenance-free (proprietary brand), integrated | | |
| **Rated voltage (linked)** | 36 VDC | 96 VDC | |
| **Battery management** | Exhaustive discharge protection / Protection against excess load<br>Automatic battery test (daily, weekly, monthly) | | |
| **Charging time (to 90 % rated capacity)** | 5 h | | |
| **COMMUNICATION** | | | |
| **Interfaces (dual monitoring)** | RS232, USB, communication slot (can be used parallel with RS232 / USB),<br>input contact for emergency power off | | |
| **Shutdown software (on CD)** | 5 network licenses for all common OS (e.g. Windows, Linux, Mac, Unix) | | |
| **User interface / failure indication (acoustic/visual)** | 3 LED's with traffic light display, detailed indication via LCD display<br>(alarms: at mains failure, overload, battery charging, battery replacement, fan fault<br>data logger – with clear text display incl. Date and time history) | | |
| **GENERAL DATA** | | | |
| **Efficiency (ECO mode)** | >93 % | >94 % | |
| **Efficiency at nominal load (double conversion mode)** | >87% | >88 % | |
| **Audible noise (1 m distance)** | ≤44 dB(A) | ≤49 dB(A) | |
| | with intelligent fan speed control and fan monitoring | | |
| **Temperature range** | 0 – 45 % | | |
| **Humidity** | 0 – 95 % (no condensation) | | |
| **Operation altitude** | Up to 1000 m at nominal load | | |
| **EMC conformity** | EN 62040-2 Class C1, EN 61000-3-2, EN 61000-3-3 | | |
| **Product safety** | EN 62040-1 | | |
| **Mains input** | IEC 320 C14 | | IEC 320 C20 |
| **Number of outputs** | 4 x IEC 320 C13 | 6 x IEC 320 C13 | 4 x IEC 320 C13 |
| | | | 1 x IEC 320 C19 + terminal |
| **Equipment color** | Blackline with silver colored front cover | | |
| **Dimensions approx. W x H x D (mm) UPS** | 145 x 220 x 400 | 190 x 345 x 460 | |
| **Dimensions approx. W x H x D (mm) battery** | Integrated (additional battery pack same dimensions as UPS) | | |
| **Weight approx. UPS** | 13 kg | 31 kg | |
| **Weight approx. battery** | 19 kg | 52 kg | |
| **Shipment** | Mains input cord, 2 device cords, communication cable (USB), management software<br>"CompuWatch" (CD), incl. 5 network licences, operating instructions | | |
| **Conformity** | CE | | |

** excl. ECO / Bypass mode*

# PROTECT C. 6000/10000

VFI

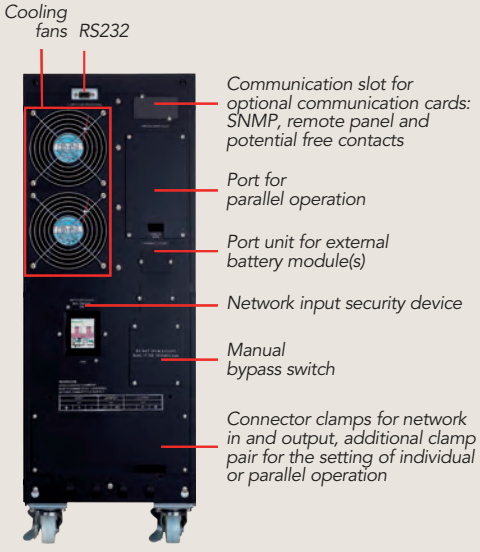
## High-performance UPS system for IT applications

Thanks to genuine VFI technology (online/double conversion), Protect C is suitable for all critical business applications.

The proven VFI topology of Protect C protects against all network problems as a matter of principle. A sinus-shaped power feed is achieved under all load conditions at the input.

| PROTECT C | Autonomy time (full/half-load) (min.) | |
|---|---|---|
| | 6000 VA | 10000 VA |
| **Default autonomy time** | 8/26 | 5/16 |
| **1 additional battery module** | 26/67 | 16/42 |
| **2 additional battery modules** | 47/112 | 27/60 |
| **3 additional battery modules** | 67/157 | 42/97 |
| **4 additional battery modules** | 94/203 | 53/118 |

*Autonomy time – battery units resemble UPS*




*Protect C. 10000 – rear view*

Highly integrated switches and a robust IGBT module reduce the number of electrical connections and components and therefore provide for increased reliability. A Static Bypass Switch (SBS) and/or an automated bypass ensure additional safety in case of overload.

### Maximum control

The bar displays for UPS load and battery capacity, as well as the clear pictogram of the system components provide information on the essential operating conditions.

Data is transmitted through an RS232 interface. With an optional SNMP (PRO) adapter, remote monitoring via a web browser and multi-server shutdown are possible.

The special AEG shutdown software "CompuWatch" is of course included.

### Switchable in parallel

Protect C. 6000 and C. 10000 offer the possibility of parallel operation. Both active redundancy and higher availability are achieved with higher power requirements being taken into account.

Also, the combination of power increase and active redundancy is possible, as up to 3 devices can be switched in parallel.

Protect C meets the highest security and availability requirements and allows for an economical implementation.

### Main characteristics

- VFI topology (online/double conversion) protects against all network problems
- Micro processor control/digital signal processors for maximum availability
- Sinus-shaped power feed (high-frequency pulse width modulation with IGBTs)
- n+x technology for redundancy and performance increase
- Extension slot for SNMP, potential-free contacts, remote panel
- Also available as an S-version with reinforced charging rectifier
- Space saving design with integrated battery system
- Integrated fault operation security for manual bypass switch

| | | |
|---|---|---|
| **Classification VFI SS 111 acc. to IEC 62040-3** | C. 6000 | C. 10000 |
| **Power type rating** | 6000 VA | 10000 VA |
| | 4200 W | 7000 W |
| | Parallel connection | Parallel connection |
| **Part number (UPS including integrated battery system)** | 600 000 5877 | 600 000 5878 |
| **Part number (battery pack)** | 600 000 5879 | 600 000 5880 |
| **Part number (UPS S–version)** | 600 000 4340 | 600 000 4341 |
| UPS INPUT | | |
| **Input voltage** | 220 VAC / 230 VAC / 240 VAC | |
| **Voltage range without battery mode** | 176 – 276 VAC | |
| **Frequency (auto selection)** | 50 Hz / 60 Hz ±4 Hz | |
| **Mains current (system reaction)** | λ ≥0.98 | |
| **Current consumption at nominal load (max.)** | 31 A | 50 A |
| UPS OUTPUT | | |
| **Rated output voltage (adjustable)** | 220 VAC / 230 VAC (default) / 240 VAC ±1 % | |
| **Frequency in battery mode** | 50 Hz / 60 Hz ±0.1 % | |
| **Output current (at 230 VAC)** | 26 A | 43.4 A |
| **Transfer time at mains outage** | 0 ms (without interruption) | |
| **Voltage waveform** | Sinusoidal, distortion THD <4 % | |
| **Overload response (online operation)** | <130 % for 10 min. / 130 % for 1 s<br>Subsequent, transfer to bypass mode | |
| **Crest factor** | 3 : 1 | |
| **Short circuit response** | Short circuit proof (3 x $I_N$ for 140 ms) | |
| BATTERY | | |
| **Type** | Sealed, maintenance free, integrated (proprietary brand) | |
| **Rated voltage (linked)** | 240 VDC | |
| **Overload/deep discharge protection** | Yes | |
| **Charging time (to 90 % rated capacity)** | 7 h | |
| COMMUNICATION | | |
| **Interfaces** | RS232 (with status display and data), communications slot for SNMP, potential free relay contact | |
| **Shutdown software (on CD)** | 5 network licenses for all common OS (e.g. Windows, Linux, Mac) | |
| **Failure indicators (acoustic/visual)** | LED display for UPS summary /battery capacity display, status display<br>Indicators for mains failure, overload, battery charging, battery replacement, failure | |
| GENERAL DATA | | |
| **Efficiency AC – AC (at nominal load)** | ≥90 % | |
| **Audible noise (1 m distance)** | <55 dB(A) | |
| **Operating temperature range** | 0° – 40 °C | |
| **Humidity** | 0 – 90 % (without condensation) | |
| **Operation altitude** | Up to 1000 m at nominal load | |
| **EMC conformity** | EN 62040-2 Class C3 | |
| **Product safety** | EN 62040-1 | |
| **Mains input** | Secured terminal block | |
| **Consumer outputs** | Secured terminal block | |
| **Equipment color** | Blackline with silver colored front cover | |
| **Dimensions approx. W x H x D (mm) UPS** | 260 x 720 x 570 | |
| **Dimensions approx. W x H x D (mm) battery** | Integrated (not S-version battery pack same dimensions as UPS) | |
| **Weight approx. UPS** | 90 kg | 93 kg |
| **Weight approx. battery** | 65 kg | 68 kg |
| **Shipment** | Parallel connection cable, management software “CompuWatch” (CD), communications cable, operating instructions | |
| **Conformity** | CE | |

# PROTECT D

VFI

*Extension slot* *Locking outputs* *Easy battery replacement*

## Efficient high-performance UPS for rack use

With a high power factor of 0.9lag 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.

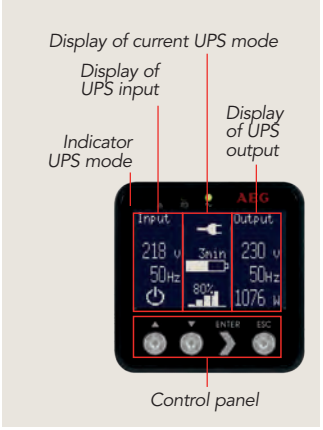
**Compact and flexible**

The height of the UPS electronics and battery together is only 2 U. With the flap front cover, battery replacement is very easy.

The autonomy times can be increased with additional battery packs; connected battery packs are automatically detected.

All batteries can be replaced during operation (hot-swappable). Our advanced battery charging technology allows for short charging times and battery-preserving charging characteristics at the same time.

Many interfaces (RS232/USB/Slot/EPO) as well as a potential-free contact within the series ensure outstanding communication capacity.




*Protect D – LCD & control panel*

**Secure and easy to use**

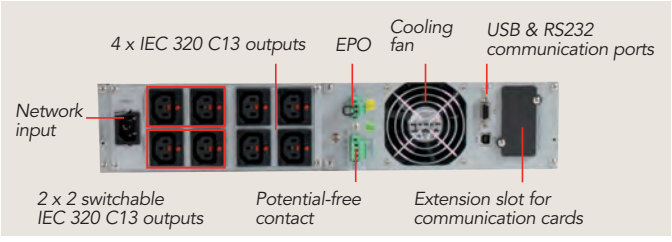
An innovative locking mechanism at the UPS outputs prevents accidental separation of the loads.

The multilingual graphic screen is very easy to read, even from a longer distance, thanks to its large format. Together with three LEDs at the top, it displays the essential operating conditions. The UPS can be directly administered with the control panel.

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.

**Main characteristics**

- VFI topology (online/double conversion) protects against all network problems
- An increase of the available performance by approx. 20 % through a 0.9lag power factor
- Increased efficiency through the ECO and ECO+ mode
- Advanced battery charging technology for maximum durability of the battery
- Hot-swappable batteries, easy replacement through hinged front
- 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
- May also be used as a frequency converter




*Protect D. 2000 – rear view*

| PROTECT D | Autonomy time (full/half-load) (min.) | | | |
|---|---|---|---|---|
| **(cos φ = 0.7lag)** | 1000 VA | 1500 VA | 2000 VA | 3000 VA |
| **Default autonomy time** | 9/24 | 8/18 | 10/21 | 6/14 |
| **1 additional battery module** | 35/71 | 31/65 | 37/77 | 24/51 |
| **2 additional battery modules** | 63/130 | 56/119 | 67/141 | 44/92 |
| **3 additional battery modules** | 94/194 | 83/178 | 99/210 | 64/137 |
| **4 additional battery modules** | 126/261 | 112/240 | 134/283 | 87/185 |

*Autonomy time – battery units resemble UPS*

| 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 including integrated battery system)** | 600 000 8434 | 600 000 8436 | 600 000 8437 | 600 000 8438 |
| **Part number (additional battery pack)** | 600 000 8441 | 600 000 8442 | 600 000 8443 | |
| **UPS INPUT** | | | | |
| **Input voltage** | 220 VAC / 230 VAC / 240 VAC | | | |
| **Voltage range without battery mode (load dependent)** | 120 – 276 VAC | | 140 – 276 VAC | |
| **Frequency (auto selection)** | 50 Hz / 60 Hz ± 5 Hz | | | |
| **Mains current (system reaction)** | λ ≥0.99 (THDi ≤8 %) | | | |
| **Current consumption at nominal load (max.)** | 4.8 A | 7.2 A | 9.6 A | 13.7 A |
| **UPS OUTPUT** | | | | |
| **Rated output voltage (adjustable)** | 200 VAC / 208 VAC / 220 VAC / 230 VAC (default) / 240 VAC ±2% | | | |
| **Frequency in battery-/ frequency converter mode** | 50 Hz / 60 Hz ±0.25 Hz | | | |
| **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 5 min. / 130 % – 150 % for 15 s | | | |
| **Overload response (battery mode)** | <130 % for 12 s / 130 % – 150 % for 2 s | | | |
| **Crest factor** | 3 : 1 | | | |
| **Short circuit response** | Short circuit proof (4 x $I_N$ for 100 ms) | | | |
| **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)** | 3 h | | | |
| **COMMUNICATION** | | | | |
| **Interfaces (dual monitoring)** | RS232, USB, communication slot (can be used 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)** | >95 % | | >98 % | |
| **Efficiency at nominal load (double conversion mode)** | ≥88 % | >88 % | >89 % | ≥90 % |
| **Audible noise (1 m distance)** | <44 dB(A) | < 45 dB(A) | <52 dB(A) | |
| **Operating temperature range** | 0°– 40°C | | | |
| **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** | EN 62040-1 | | | |
| **Mains input** | IEC 320 C14 | | | IEC 320 C20 |
| **Number of outputs (switchable) automatically locked** | 6 x IEC 320 C13 (2+2) | | 8 x IEC 320 C13 (2+2) | 6 x IEC 320 C13 (3+3) + 1 x IEC 320 C19 |
| **Housing** | Blackline metal case with aluminum front | | | |
| **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 | 41 kg | 41 kg |
| **Shipment** | Mains input cord, UPS management software "CompuWatch" (CD), communications cables (RS232 & USB), operating instructions, rack rails, device cables: 3 x IEC 320 C13 (D. 1000 – D. 2000), 3 x IEC 320 C13 +1 x IEC 320 C19 (D. 3000) | | | |
| **Conformity** | CE | | | |

**excl. ECO/Bypass mode usage*

# PROTECT D. 6000/10000

VFI

## 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 0.9lag.

### 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.

### Special characteristics

- 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)

*Protect D. 10000 – rear view: flexible, removable connection unit with manual bypass and integrated IEC output distribution with automated locking mechanism*

*Protect D. 6000 with open battery compartment*

| PROTECT D | Autonomy time (full/half-load) (min.) | |
|---|---|---|
| **(cos φ = 0.7lag)** | 6000 VA | 10000 VA |
| **Default autonomy time** | 5/13 | 5.5/10.5 |
| **1 additional battery module** | 15/39 | 12/25 |
| **2 additional battery modules** | 26/67 | 20/41 |
| **3 additional battery modules** | 38/98 | 28/59 |
| **4 additional battery modules** | 51/132 | 36/78 |

*Autonomy time – battery units resemble UPS*

| 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 incl. internal battery system) | 600 000 8439 | 600 000 8440 |
| Part number (additional battery pack) | 600 001 1042 | 600 001 1044 |
| **UPS INPUT** | | |
| Input voltage | 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) | 50 Hz / 60 Hz ±10 % | |
| Mains current (system reaction) | λ ≥0.99 (THDi <5 %) | |
| Current consumption at nominal load (max.) | 29 A | 47 A |
| **UPS OUTPUT** | | |
| Rated output voltage (adjustable) | 200 VAC / 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 | Sinusoidal, distortion THD <2 % | |
| Overload response (double conversion mode) | <130 % for 2 min. / 130 – 150 % for 30 s, then automatically switches over to electronic bypass: 0 ms | |
| Crest factor | 3 : 1 | |
| Short circuit response | Short circuit proof (3 x $I_N$ for 100 ms) | |
| **BATTERY** | | |
| Type | Sealed, maintenance free (proprietary brand), integrated, hot swappable | |
| Rated voltage (linked) | 180 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 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) | >96 % | >97 % |
| Efficiency at nominal load (double conversion mode) | >92 % | >93 % |
| Audible noise (1 m distance) | <55 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, separate power option from rectifier and bypass connector unit with removable integrated manual bypass (for installation or subsequent maintenance of UPS) with optional cable entry from top or rear | |
| Number of outputs automatically locked | 1 x fixed connection on terminal block plus 2 x IEC 320 C13, 1 x IEC 320 C19 | 1 x fixed connection on terminal block plus 4 x IEC 320 C19 |
| Housing | Metal casing, blackline with aluminum cabinet front | |
| Dimensions approx. W x H x D (mm) without front panel | 48.6 (19") x 132 (3 U) x 715 depth with front panel plus 35 mm | 48.6 (19") x 220 (5 U) x 715 depth with front panel plus 35 mm |
| Dimensions approx. W x H x D (mm) battery extension unit incl. front panel | 482.6 (19") x 132 (3 U) x 595 | |
| Weight approx. without batteries | 20 kg | 32.5 kg |
| Weight approx. with batteries | 46 kg | 82.5 kg |
| Weight approx. battery extension unit | 44.5 kg | 63 kg |
| Shipment | Rack rails kit, 16 A IEC device cable, UPS management software "CompuWatch" (CD) incl. 5 network licenses, RS232 and USB cable, operating instructions | |
| Conformity | CE | |

# PROTECT 1

VFI

## Online UPS systems for networks and data centers

Protect 1 offers you a high-power UPS system for all critical business applications. Among other fields of use, Protect 1 is suitable for networks, data centers, cash desk systems or building technology.

The VFI topology of Protect 1 protects reliably against all network problems.

### Switchable in parallel

A compact parallel switch panel ensures the flexible and easy development of a parallel system.

Up to 3 devices can be switched in parallel. Hence, a power increase up to 60 kVA is possible in addition to the combination of power improvement and redundancy.

### Control and monitoring

The clearly structured screen provides detailed information on all important operating conditions and events.

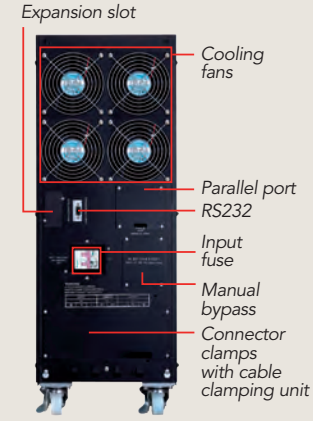
Data is transmitted through an RS232 interface.

With the extension slot, devices such as SNMP (PRO) adapter cards or potential-free contacts can be retrofitted. This supports remote monitoring via web browser and multi-server shutdown.

The special AEG shutdown software "CompuWatch" is included.

### Main characteristics

- VFI topology (online/double conversion) protects against all network problems
- Static bypass switch (SBS) and foolproof maintenance bypass
- 10, 15 or 20 kVA with space-efficient, modern design
- n+x technology for active redundancy and/or performance increase
- Performance increase up to 60 kVA through parallel operation of up to 3 devices
- RS232 interface, extension slot e.g. for SNMP adapter card
- Battery systems with an expected lifespan of 10–12 years, according to EUROBAT, are available
- State-of-the-art technology for maximum reliability (DSP, CAN-Bus) and maximum efficiency (high-frequency IGBT)




*Protect 1.200 – rear view*


*Protect 1 during parallel operation*

| PROTECT 1 | Autonomy time (full/half-load) (min.) | | | |
|---|---|---|---|---|
| **Coupled battery cabinets** | Protect 1.100 | Protect 1.150 | Protect 1.200 | |
| **1 x Protect 1.100 BP** | 16/42 | - | - | Port "plug & play" with battery connection wire protected against polarity reversal |
| **2 x Protect 1.100 BP** | 42/97 | - | - | |
| **3 x Protect 1.100 BP** | 60/134 | - | - | |
| **1 x Protect 1. BP 20** | 19/47 | 10/29 | 6/19 | Battery cabinets, pre-assembled and ready to be connected<br>Protect 1. BP 20<br>Period of use of the integrated rechargeable batteries:<br>10 – 12 years according to EUROBAT |
| **2 x Protect 1. BP 20** | 47/103 | 29/68 | 19/47 | |
| **3 x Protect 1. BP 20** | 78/177 | 47/103 | 34/62 | |
| **4 x Protect 1. BP 20** | 103/243 | 68/153 | 47/103 | |
| **5 x Protect 1. BP 20** | 138/312 | 85/202 | 63/138 | |

*Autonomy times – battery cabinets resemble UPS*

| Classification VFI SS 111 acc. to IEC 62040-3 | Protect 1.100 | Protect 1.150 | Protect 1.200 |
|---|---|---|---|
| | n+x - technology scalable (parallel switching capacity up to 3 units) | | |
| **Power type rating** | 10 kVA | 15 kVA | 20 kVA |
| | 7 kW | 10.5 kW | 14 kW |
| **Part number (UPS without battery)** | 600 000 4434 | 600 000 4435 | 600 000 4436 |
| **Part number (battery pack 1.100 BP)** | 600 000 5097 | | |
| **Part number (battery pack 1. BP 20)** | 100 000 1991 | 100 000 1991 | 100 000 1991 |
| UPS INPUT | | | |
| **Input voltage** | 400 / 230 VAC (3 ph~/N/PE) | | |
| **Voltage range without battery mode** | 304 – 478 VAC (Bypass: 176 – 261 VAC) | | |
| **Frequency (automatic selection)** | 50 Hz / 60 Hz ±4 Hz | | |
| **Mains current (system reaction)** | λ ≥0.95 | | |
| **Current consumption at nominal load (max.)** | 13 A / 46 A (bypass) | 19 A / 68 A (bypass) | 25 A / 91 A (bypass) |
| UPS OUTPUT | | | |
| **Rated output voltage (adjustable)** | 220 VAC / 230 VAC (default) / 240 VAC ±1 % | | |
| **Frequency in battery mode** | 50 Hz / 60 Hz ±0.1 % | | |
| **Output current (at 230 VAC)** | 43.4 A | 65.2 A | 86.9 A |
| **Transfer time at mains outage** | 0 ms (without interruption) | | |
| **Voltage waveform** | Sinusoidal, distortion THD <2 % | | |
| **Overload response** | <130 % for 10 min. / 130 % for 1 s,<br>then automatic transfer to bypass mode: 0 ms (without interruption) | | |
| **Crest factor** | 3 : 1 | | |
| **Short circuit response** | Short circuit proof (2.5 x $I_N$ for 100 ms) | | |
| BATTERY | | | |
| **Rated voltage (linked)** | 240 VDC | | |
| **Charging characteristics** | IU – characteristic curve (charging voltage 274 VDC / charging current max. 4.2 A) | | |
| **Autonomy time** | Expandable with external battery modules | | |
| **Overload/deep discharge protection** | Yes | | |
| COMMUNICATION | | | |
| **Interfaces** | RS232 (with status display and data values)<br>Communication slot (for potential free contact, SNMP) | | |
| **Shutdown software (on CD)** | 5 network licenses for all common OS (e.g. Windows, Linux, Mac, Unix, Sun etc.) | | |
| **Failure indicators (acoustic/visual)** | Mains failure, overload, battery charging, battery replacement, failure<br>LED bar graph for summary / battery capacity | | |
| GENERAL DATA | | | |
| **Efficiency AC – AC (at nominal load)** | >90 % | | |
| **Audible noise (1 m 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 62040-2 Class C3 | | |
| **Product safety** | EN 62040-1 | | |
| **Equipment color** | Blackline with silver colored front cover | | |
| **Dimensions approx. W x H x D (mm) UPS** | 260 x 720 x 670 plus interception unit (90) | | |
| **Dimensions approx. W x H x D (mm) battery extension unit** | 260 x 720 x 670<br>(Protect 1.100 BP) | | |
| | 260 x 720 x 810<br>(Protect 1. BP 20) | 260 x 720 x 810<br>(Protect 1. BP 20) | 260 x 720 x 810<br>(Protect 1. BP 20) |
| **Weight approx. UPS** | 39 kg | 55 kg | 55 kg |
| **Weight approx. battery extension unit** | 135 kg<br>(Protect 1.100 BP) | | |
| | 170 kg<br>(Protect 1. BP 20) | 170 kg<br>(Protect 1. BP 20) | 170 kg<br>(Protect 1. BP 20) |
| **Shipment** | Parallel connection cable, communication cable,<br>UPS management software "CompuWatch" (CD), operating instructions | | |
| **Conformity** | CE | | |

# PROTECT 1.M

VFI

*Front view with swappable module unit technology*

## Modular high-performance UPS for the IT sector

Protect 1.M is a UPS system with maximum reliability and power.

The VFI topology of Protect 1.M protects its systems reliably against all network problems.

### Modular structure

The compact module structure of Protect 1.M allows you to flexibly upgrade the UPS power up to 24 kVA. The individual 4 kVA modules are hot-swappable, connected modules are automatically detected.

In this way, you can perform system extensions during runtime.

Each individual module is a separate UPS and works independently of a central control mechanism.

### Intelligent control and monitoring

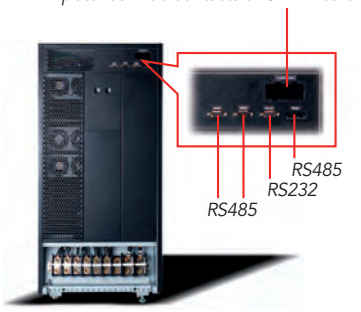
The powerful communication module of Protect 1.M collects the information of the self-sufficient UPS modules. The clearly designed screen informs you about all important operating conditions.

You can also retrieve and control all technical parameters with the included AEG software "CompuWatch".

### Main characteristics

- High power reserves through a total performance of max. 24 kVA
- Wide security margins through n+x technology
- Static bypass switch (SBS) and foolproof maintenance bypass
- 3 or 1-phase connection of the entire installation with an automated detector, 1-phase output
- Long autonomy periods available in case of power failure
- Battery cabinets in the Protect 1.M range supplied with 10 to 12 year battery life according to EUROBAT
- Intelligent battery management
- Hot-swappable module for easy replacement during operation
- Module structure to be plugged into a compact tower, assembly in 19" rack possible
- Communication module with LCD, "Dual Monitoring" interface with expansion slot

*Expansion slot for relay card with potential-free contacts or SNMP card*




*Dual monitoring interface*

**n+x TECHNOLOGY – LEVEL OF REDUNDANCY**

| Load | Number of UPS modules | | | | | |
|---|---|---|---|---|---|---|
| | 1 module | 2 modules | 3 modules | 4 modules | 5 modules | 6 modules |
| **4 kVA** | no redundancy | n+1 (4 kVA) | n+2 (8 kVA) | n+3 (12 kVA) | n+4 (16 kVA) | n+5 (20 kVA) |
| **8 kVA** | | no redundancy | n+1 (4 kVA) | n+2 (8 kVA) | n+3 (12 kVA) | n+4 (16 kVA) |
| **12 kVA** | | | no redundancy | n+1 (4 kVA) | n+2 (8 kVA) | n+3 (12 kVA) |
| **16 kVA** | | | | no redundancy | n+1 (4 kVA) | n+2 (8 kVA) |
| **20 kVA** | | | | | no redundancy | n+1 (4 kVA) |
| **24 kVA** | | | | | | no redundancy |

**CLASSIFICATION OF THE BATTERY CABINETS AVAILABLE EX WAREHOUSE – IN THE PROTECT 1.M RANGE**

| | 15 min. | 20 min. | 30 min. | 40 min. | 60 min. | 75 min. | 90 min. |
|---|---|---|---|---|---|---|---|
| **4 kVA** | - | - | - | 1 x 1.M BP28 | 1 x 1.M BP42 | - | 1 x 1.M BP56 |
| **8 kVA** | 1 x 1.M BP28 | - | 1 x 1.M BP42 | 1 x 1.M BP56 | 1 x 1.M BP84 | 2 x 1.M BP65 | 1 x 1.M BP84 |
| | | | | | | | 1 x 1.M BP42 |
| **12 kVA** | 1 x 1.M BP42 | 1 x 1.M BP65 | - | 1 x 1.M BP84 | 2 x 1.M BP65 | - | 3 x 1.M BP65 |
| **16 kVA** | 1 x 1.M BP56 | - | 1 x 1.M BP84 | 1 x 1.M BP84 | 2 x 1.M BP84 | 3 x 1.M BP65 | 4 x 1.M BP65 |
| | | | | 1 x 1.M BP42 | | | |
| **20 kVA** | - | 1 x 1.M BP84 | 1 x 1.M BP84 | 3 x 1.M BP65 | 2 x 1.M BP84 | 4 x 1.M BP65 | 5 x 1.M BP65 |
| | | | 1 x 1.M BP42 | | 1 x 1.M BP42 | | |
| **24 kVA** | 1 x 1.M BP84 | 2 x 1.M BP65 | 1 x 1.M BP84 | 2 x 1.M BP84 | 4 x 1.M BP65 | 5 x 1.M BP65 | 6 x 1.M BP65 |
| | | | 1 x 1.M BP42 | | | | |

*Further versions available upon request*

| Classification VFI SS 111 acc. to IEC 62040-3 | Protect 1.040 | Protect 1.M |
|---|---|---|
| | UPS Module | System cabinet (max. 6 x 4 kVA) |
| Power type rating | 4 kVA | 24 kVA |
| | 2.8 kW | 16.8 kW |
| | n+x technology | |
| Part number | 600 000 3928 | 600 000 3930 |
| UPS INPUT | | |
| Input voltage (auto. detection) | 230 VAC (1 ph~/N/PE) or 400 / 230 VAC (3 ph~/N/PE) | |
| Voltage range without battery mode | 160 – 300 VAC (1 ph~) or 277 – 520 VAC (3 ph~) | |
| Frequency | 50 Hz / 60 Hz ±4 Hz | |
| Current consumption (max.) | 22 A (1 ph~) or 7.3 A (3 ph~) | 132 A (1 ph~) or 44 A (3 ph~) |
| Power factor | λ ≥0.98 | |
| UPS OUTPUT | | |
| Rated output voltage (adjustable) | 220 VAC / 230 VAC / 240 VAC ±2 % | |
| Frequency in battery mode | 50 Hz / 60 Hz ±0.2 Hz | |
| Output current | 17.4 A | 104.4 A |
| Transfer time at mains outage | 0 ms (without interruption) | |
| Voltage waveform | Sinusoidal, distortion THD <3 % | |
| Overload response (online mode) | 125 % for 30 s / 130 % for 2 s, then automatic transfer to bypass mode: 0 ms (without interruption) | |
| Crest factor | 3 : 1 | |
| Short circuit response | Short circuit proof (3 x $I_N$ for 100 ms) | |
| BATTERY | | |
| Rated voltage (linked) | 120 VDC | |
| Charging characteristics | IU – characteristic curve (charging voltage 137 VDC / charging current max. 3.5 A/ module) | |
| Autonomy time | Freely selectable and expandable with external battery modules (available modules with 28, 42 or 65 Ah) Service life: 10 – 12 years acc. to EUROBAT | |
| Overload/deep discharge protection | Yes | |
| COMMUNICATION | | |
| Interfaces (dual monitoring) | RS232 / RS485 (with status display and data values) communication slot (for potential free contacts, SNMP) | |
| Shutdown software (on CD) | 5 network licenses for all common OS (e.g. Windows, Linux, Mac, Unix, Sun etc.) | |
| Failure indicators (acoustic/visual) | Graphical LCD display with digital display of the input and output parameters (voltage, frequency, capacity etc.), battery parameters incl. password protected detailed failure diagnostics, LED display for status notification / central failure display | |
| GENERAL DATA | | |
| Efficiency AC – AC (at nominal load) | >89 % | >88 % |
| Audible noise (1 m distance) | <55 dB (A) | <62 dB(A) |
| Operating temperature range | 0° – 40°C | |
| Humidity | 20 % – 90 % | |
| Operation altitude | Up to 1000 m at nominal load | |
| EMC conformity | EN 62040-2 Class C3 | |
| Product safety | EN 62040-1 | |
| Mains input | Secured terminal block | |
| Consumer outputs | Secured terminal block | |
| Equipment color | Blackline | |
| Dimensions approx. W x H x D (mm) UPS | 442 x 965 x 700 (chassis) / module each: 405 x 87 x 530 | |
| Dimensions approx. W x H x D (mm) battery extension unit | 442 x 965 x 700 | |
| Weight approx. UPS | 75 kg (chassis) + 15 kg per module | |
| Weight approx. battery cabinet | 1.M BP28: 160 kg, 1.M BP42: 200 kg, 1.M BP56: 255 kg, 1.M BP65: 270 kg, 1.M BP84: 335 kg | |
| Shipment | Communications cable, UPS management- software “CompuWatch” (CD), operating instructions | |
| Conformity | CE | |

REMOTE PANEL, DISTRIBUTION UNITS

# EXTENSIONS AND ACCESSORIES


*Remote Panel*

## Remote Panel remote monitoring unit for professional data center management

The remote signal table displays the UPS operating status in real time at a remote monitoring site.

In addition, a bar display informs about the current UPS capacity utilization and/or in the emergency power operating mode about the remaining available capacity.

An acoustic alarm, which can be deactivated, completes the optical display.

The remote monitoring unit can be installed at a distance of up to 500 m from the UPS being monitored.

Data transmission and voltage supply of the remote signal panel are ensured with a conventional patch cable.

The Remote Panel is available for Protect C, Protect D, Protect 1 and Protect 1.M

**Part number**

- Remote Panel: 600 000 5881

## Distribution bars for professional data centers

The distribution bar enables you to distribute the UPS outputs among several loads. Different versions support the load connection via Schuko or non-heating sockets (IEC 320 C13 & C19).

Depending on the connection type, the ports are protected against overload – centrally or in pairs. This ensures an extremely effective fulfillment of selected criteria in accordance with specific shutdown conditions.

LEDs display the current operating status of the distribution bar. With the pluggable fastening brackets, the distribution bars are flexibly installed in default rack systems. The fastening brackets can be removed for on-table operation and therefore enable flexible use.

Thanks to the robust aluminum housing, the PDU distribution bars are torsion-resistant and extremely durable.

**Part numbers**

- IEC Distribution Bar: 600 000 9254
- PDU 10-1: 600 000 6829
- PDU 10-2: 600 000 6831
- PDU 16-1: 600 000 6830
- PDU 16-2: 600 000 6832

*Sub-distributions*

# MANUAL BYPASS SWITCH, POWER DISTRIBUTION BOX

*Manual Bypass Switch*

*Power Distribution Box*

## Manual Bypass Switch unit for maintenance works and tests

The external manual bypass switch for the series Protect A, B.PRO, C, D, 1 and 1.M is used to disconnect the UPS for maintenance works allowing uninterrupted, continuous feed of the connected loads.

Besides the sheer bypass operation, the manual bypass switch also enables a UPS test run. Non-heat device sockets in the output of the smaller devices enable direct feeding of the loads. Space for a separate, complete sub-distributor is provided by MBS 24000. The external manual bypass unit supports 3 operating modes:

1. UPS mode: the loads are fed through the UPS

2. Service mode: the loads are directly fed by the power supply system. A UPS test can be run at the same time.

3. Bypass operation: the loads are directly fed by the power supply system. The connected UPS is completely separated from the circuit and can be removed for maintenance and replacement works.

**Part numbers**

- MBS 2000: 600 000 3039
- MBS 3000: 600 000 3040
- MBS 6000: 600 000 5205
- MBS 10000: 600 000 7684
- MBS 24000: 100 000 2021

## Power Distribution Box, parallel switch panel, manual bypass and distributor panel

The compact parallel switch panel enables the development of a parallel system without modifying the existing low voltage distribution system. Through the output distribution with up to 24 separately protected and pre-configured circuits, which can be partially integrated in the parallel switch panel, modification of the sub-distribution circuit is no longer required.

The panel enables parallel switching of the devices to increase power and/or to achieve redundancy. Each UPS device can be disconnected from the power supply system and also from the safe bar facing the output without interrupting the voltage supply of the loads.

With the integrated manual bypass switch, the complete UPS parallel system can be disconnected, e.g. for maintenance works. In this case, the loads are fed without interruption.

**Part numbers**

- PDB Protect C: 100 000 1852
- PDB Protect D: 600 001 2436
- PDB Protect 1: 100 000 1853

# SNMP (PRO / MINI) CARD, ENVIRONMENT MANAGER

*SNMP (PRO/mini) card*


*Environment Manager*

## SNMP (PRO/mini) card Network-based UPS management

SNMP adapters are communication extensions for the UPS series starting from Protect B. PRO. All versions support monitoring of UPS devices via the web.

If needed, a phased shutdown of all relevant servers in the network is possible. Via Wake-up-on-LAN, the servers can be re-activated. This enables an automated shutdown and reboot of the system. The UPS can also be configured and monitored by network management software with the integrated SNMP agent according to RFC1628.

The PRO and mini version of the SNMP adapter further enables the integration of features such as area access control, air condition or smoke and/or fire detectors. In addition, temperature and humidity can be measured and administered by means of optical sensors.

The SNMP PRO adapter enables, among other features, the connection of an intelligent load management distributor.

**Part numbers**

- SNMP adapter: 600 000 4036
- SNMP-PRO adapter: 600 000 1271
- SNMP-mini adapter: 600 000 8668
- Digital temperature sensor: 800 002 0878
- Digital combi sensor for temperature and humidity: 800 002 2493
- External relay board: 800 002 5994
- Load management distributor: 800 000 6684

## Environment Manager Management unit for several environmental sensors

The Environment Manager is designed as a system extension for the SNMP-PRO and SNMP-mini adapter. It is a universally applicable device for the administration of sensors. A total of 8 analog sensor units, 4 digital inputs and 4 digital outputs can be managed.

Each type of sensor unit can be connected, e.g. for temperature, humidity, pressure, tank level, chemical concentration or similar features. The incoming signal voltages only need to be within the specified parameter range: 0 – 10 V for analog inputs, 30 V 500 mA for digital in- and outputs. The digital inputs can, under normal circumstances, be configured optionally as N/O or N/C contacts.

**Part number**

- Environment Manager: 800 002 2488

# BUILDING MANAGEMENT, RELAY CARD

*Building management*

*Relay card*

## Building management sensors for environmental data

With monitoring sensors for environmental data, you can upgrade the UPS management to a complete building management system for your data center. All devices are compact and equipped with a 5 m RJ12 connection cable.

**Temperature sensor**
Measurement range:
0 °C – +100 °C, ±1 %

**Combi sensor**
Measurement range:
temperature
0 °C – +100 °C, ±1 %
relative humidity
0 – 100 %, ±5 %

**Motion sensor**
Coverage:
14 m x 14 m, 90°

**Smoke sensor**
Smoke detector with photocell

**Acoustic alarm**
Signaling through Piezo buzzer, approx. 85 dB(A)

**Optical alarm**
Signaling through stroboscope light

**Part numbers**

- Temperature sensor: 800 002 2489
- Combi sensor for temperature and humidity: 800 002 2492
- Motion sensor: 800 002 2494
- Smoke sensor: 800 002 2495
- Piezo alarm: 600 000 7361
- Stroboscope alarm: 600 000 7362

## Relay card Communication through potential-free contacts

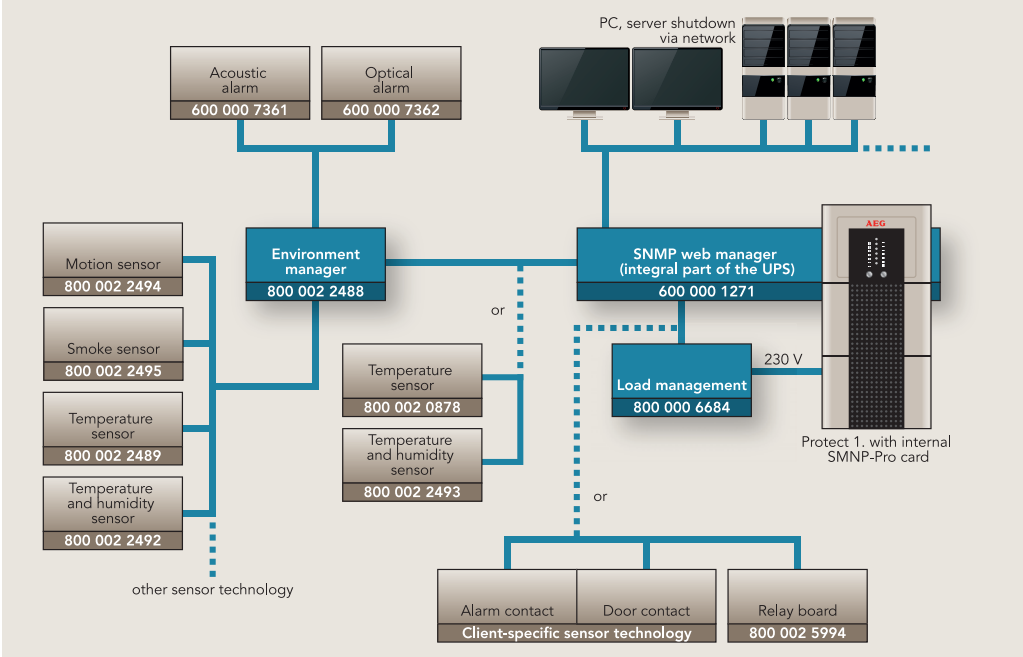
The relay card is an option for the UPS series starting from Protect B. PRO.

It provides potential-free contacts at the outputs, which can be configured optionally as N/O or N/C contacts and which can be used as binary input for the SPS or building control systems.

Tapping occurs via a sub-D-slot and, in case of the programmable PRO design, via a clamping block designed for supply voltage potential.

**Part numbers**

- Relay card mini: 600 000 9252
- Relay card standard: 600 000 3932
- Relay card PRO: 600 000 9253



# COMPUWATCH

## "CompuWatch" – shutdown and UPS management software

"CompuWatch" is based on the TCP/IP network protocol and can therefore be used in non-standard networks. "CompuWatch" allows you to shut down server and computer systems with diverse operating systems safely and automatically when needed.

Through the intelligent communication link between the UPS, the server and the existing network topology, information is forwarded by means of security mechanisms to all server and computer systems powered by the UPS. This is where the information is processed in the software modules. Phased shutdowns are possible if the software modules on the respective servers are configured accordingly.

All "CompuWatch" modules work as a service and/or backend process. Individual procedures can be launched through shellscript and/or batch programming.

With the "CompuWatch" client, a graphical front end for Microsoft Windows operating systems, you can monitor and control all UPS installations connected to the network. It is also possible to control the network using the scheduler.

AEG Power Solutions products provide you with a complete, one-stop-shop security solution for networks:

**Main characteristics**

- Software in client/ server technology
- Integration in the operating system as a back end process or service
- Supports RS232, USB and network interface in the UPS devices
- User-friendly, easy installation and configuration
- Multi-server-shutdown in standard and non-standard networks
- Programmable activities thanks to a scheduling mechanism
- Password-protected control functions
- User-friendly front end to monitor UPS devices, locally and through the network
- Selectable bar displays for measured values
- Automated shutdown of server and computer systems
- Supports the Wake-up-on-LAN function for sequential reboots
- Adaptable shutdown procedure through shell script and batch files
- Notification of events by network message, e-mail and text message
- Freely configurable event manager
- Logging of all UPS and computing events based on date and time
- Supports the most important operating systems on different platforms. The recent overview can be found on www.aegps.com

SOFTWARE
UNMS

## "UNMS" – network management software for UPS devices

With the network management software for UPS devices "UNMS", you can easily monitor and control higher numbers of UPS systems in different networks.

The software gives the administrator an overview over all installed UPS systems and informs about the operating conditions at the individual sites. This enhances security and availability. Centralized administration of the installation is possible.

If there is a problem in one of the UPS units, the "UNMS" software informs the administrator, optionally and on request, by network message, e-mail or text message.

The administrator can immediately take appropriate counter-measures.

The network management software supports all common web browsers and gives administrators the necessary flexibility to manage larger networks. UPS status information, log history and reports can be viewed anywhere in the web browser.

### Main characteristics

- Web-based remote monitoring of power supply systems in the network
- Easy administration of complex power supply infrastructures
- Notification about events by means of network messages, e-mails or text messages
- Logging of all events in a logbook
- Graphics for statistical evaluation
- Customer-specific adaptations with background graphics possible

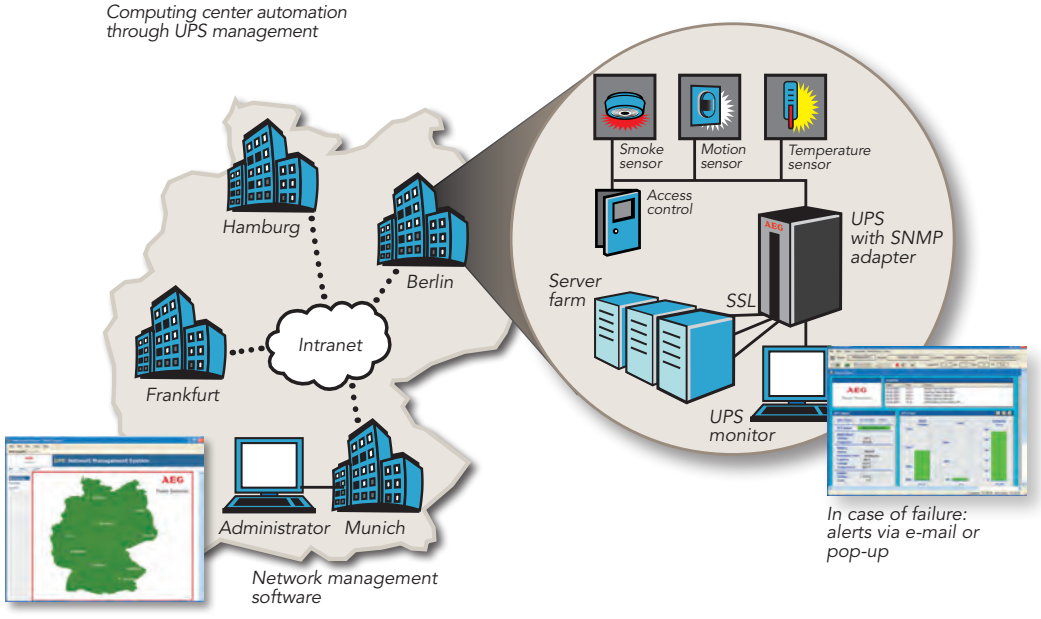
### Complete solutions

With the "UNMS" software for remote administration in connection with "CompuWatch", you can create a standardized management system to run several data centers. The optional sensors enable you to also monitor environmental data and hence to create a comprehensive solution.

### Main characteristics

- Environmental control with sensors, e.g. for temperature, humidity, smoke and motion detectors
- Secure communication between UPS and server through SSL encryption
- Local alarm through actuators such as alarm lights or acoustic signaling devices
- Alerts via network messages, e-mail or text messages
- Completely automated server management by means of programmable events

*Computing center automation through UPS management*



AEG POWER SOLUTIONS

# YOUR POWER PARTNER – ALSO FOR SERVICES

## Service for the compact UPS series

On the basis of our high standards and decades of experience, we also provide affordable, efficient and fast services.

During the first 24 months after the purchase of new equipment, we offer a nationwide replacement service in advance for devices and batteries of the compact UPS series (Protect Home / alpha / A / B. PRO / C / D / 1 / 1.M).

Additional service packages adapted to the users' needs are directly available at the UPS point of sale. They offer optimal cost control during a period of up to 60 months.

The following service packages are available:

### Pro-Care Garant

In addition to the standard 24 month warranty, an extension to 36 months is available.

Please contact your AEG Power Solutions represantative if you are interested.


### Pro-Care Garant PLUS

With Pro-Care Garant PLUS, the warranty is extended to 60 months starting from the date of purchase.

The option can be acquired within the first year after purchase of the equipment and includes up-front replacement of the UPS during the entire warranty period.

Pro-Care Garant PLUS is available for the series Protect C, Protect D, Protect 1 und Protect 1.M.


### Pro-Care Start Commissioning

AEG Power Solutions provides you with a professional commissioning services to ensure that your system is ready for use.

Our experts commission your system in accordance with the relevant norms and conduct rigorous functional tests. Thanks to Pro-Care Start Commissioning, you will also benefit from comprehensive protection covered by the manufacturer's warranty.

CHOOSE YOUR UPS

# NEW CONFIGURATOR FOR 1-PHASE UPS SOLUTIONS

## The right UPS solution is just a few clicks away!

With the new UPS Configurator you can quickly find the right UPS system for your requirements. The web app works in all common browsers and runs on PCs, tablets and mobile phones.

Bookmark **www.aegps.com/ups-configurator** or scan the QR code.

Besides the basic calculation based on load and autonomy time, you can find a future-proof solution with power reserve and redundancy. Use the optional filters for form, technology, connectors and accessories.

The Configurator shows you the results for best price, best value and best performance. You choose which fits to your application.

Send the results directly as an enquiry or contact our sales team directly from the app – even on mobile devices.


http://www.aegps.com/ups-configurator



## 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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