

PROTECT 3.M 2.0

MODULAR UPS SYSTEM

Uninterruptible Power Supply

3-Phase Input; 3-Phase Output

20–120 kVA power supply



Networks, workstations, intranet and internet servers, telecommunications applications and other company applications must be permanently available. AEG Protect 3.M 2.0 is the modular UPS solution for IT and telecommunications. Modern data centers require the highest levels of efficiency, reliability and flexibility.

Protect 3.M 2.0 provides a technically convincing and reliable solution to this requirement that can be modularly adapted to any increasing power demand.

An extension can be made at any time during operation. The flexible redundancy concept ensures a steady power supply to any connected devices.

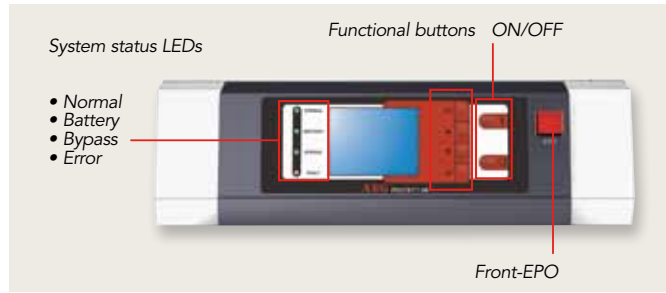
Lower operating costs for energy and cooling with high efficiency and fast module replacement in the event of power failure, reduce operational costs and ensure an optimal price vs. performance ratio for the Protect 3.M 2.0 UPS solution.

Key features

- » Modular design allows for flexible adaption to the current power demand
- » Up to 95% efficiency in "online double conversion" mode, up to 98% in ECO mode
- » IGBT technology, input power factor >0.99
- » Low phase effect <3%
- » Redundant control and n+x parallel redundancy for high availability
- » Parallel operation of up to 4 UPS units (max. 480kVA)
- » Module installation and removal during operation ("hot swappable")
- » Graphical LCD screen
- » Built-in manual bypass, separate input for bypass power
- » Load dependent fan speed
- » Small footprint

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POWER SOLUTIONS

PROTECT 3.M 2.0



Power outages can lead to significant financial loss

Almost all labor and production processes today are based on high capacity data and IT infrastructure. Power outages or voltage fluctuations that lead to systems failure end almost always with disrupted operations, loss of production and, at worst, irretrievable data loss.

Your important IT infrastructure must be permanently available and protected against power disturbances of all kinds. Through the use of VFI (conversion) technology, Protect 3.M 2.0 reliably protects your systems against power outages and network disruptions and ensures the value of your business.

Modularity provides safety reserves and flexibility

Protect 3.M 2.0 is an uninterruptible power supply of the highest reliability.

With increasing demands on performance, the compact modular design adapts the permitted UPS power according to your current power needs. This can be done without additional installation costs since the power modules can be easily inserted and are automatically recognized by the system ("hot swappable"). No additional connections are required for this operation.

Dynamic redundancy

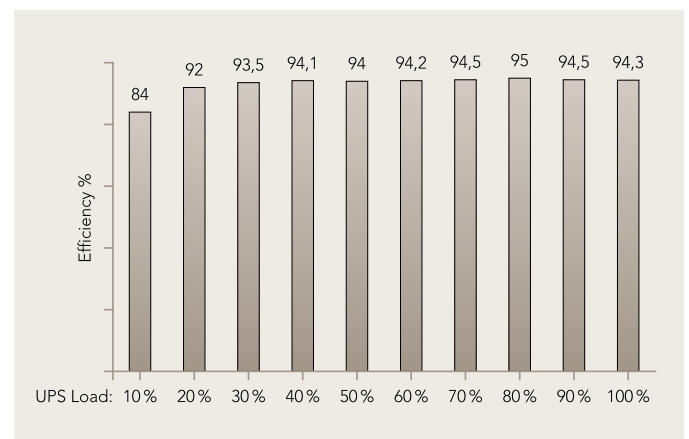
An automatic load balancing to all modules within an appropriately designed system delivers N+x redundancy without the requirement for any configuration changes or increases to load capacity.

High efficiency lowers operating costs and CO₂ emissions

Protect 3.M 2.0 is based on high efficiency IGBT technology. This provides an efficiency of up to 95% in double conversion mode. With a 35% loading, the UPS still maintains an efficiency of 94%. In addition to the lowering of power loss unwanted generation of heat is also reduced, thereby reducing air conditioning requirements. All of this leads to significant cost savings and a reduction in CO₂ emissions.

Input power factor 1.0

100% active power from the UPS reduces the generator specification and consequent installation cost increases.



| Classification VFI SS 111 acc. to IEC 62040-3 | | Protect 3.M 2.0 | | | | |
|---|--|-----------------|-------------|------------------|-------------|-------------|
| Power type rating | 20 kVA | 40 kVA | 60 kVA | 80 kVA | 100 kVA | 120 kVA |
| | 16 kW | 32 kW | 48 kW | 64 kW | 80 kW | 96 kW |
| SYSTEM | | | | | | |
| Nominal input current | 29 A | 59 A | 88 A | 117 A | 145 A | 172 A |
| Efficiency (typical) | 95 % | | | | | |
| Efficiency in ECO mode | 98 % | | | | | |
| Waste heat from power (typical) | 1.3 kW | 2.6 kW | 3.9 kW | 5.2 kW | 6.5 kW | 7.8 kW |
| | 4436 BTU/h | 8872 BTU/h | 13308 BTU/h | 17744 BTU/h | 22180 BTU/h | 26616 BTU/h |
| Airflow (max.) m ³ /h | 309 | 617 | 926 | 1234 | 1543 | 1852 |
| INPUT | | | | | | |
| Nominal voltage | 3 x 400 V (380 V, 415 V adjustable), 3 phase + neutral | | | | | |
| Input voltage range | 305 – 477 V | | | | | |
| Frequency | 50 Hz/ 60 Hz (adjustable) | | | | | |
| Total harmonic distortion (THDv) | ≤3 % ¹⁾ | | | | | |
| Power factor | >0.99 | | | | | |
| INVERTER | | | | | | |
| Nominal voltage | 3 x 400 V (380 V, 415 V adjustable), 3 phase + neutral | | | | | |
| Frequency | 50 / 60 Hz (adjustable) | | | | | |
| Precision static/dynamic | ±1 % / ±7 % | | | | | |
| Total harmonic distortion (THDv) | <3 % (linear load), <5 % (non-linear load) | | | | | |
| Max. phase displacement | ±1.5 % (balanced load), ±2 % (100 % unbalanced load) | | | | | |
| Admissible overload | 125 % for 10 min., 150 % for 60 s | | | | | |
| Crest factor | 2.7 : 1 | | | | | |
| Max. short circuit current | >270 % of the rated current | | | | | |
| Admissible power factor | 0.1 inductive to 0.1 capacitive | | | | | |
| BATTERY | | | | | | |
| Rated voltage | ±240 V DC | | | | | |
| Max. charging power | 5 A | 10 A | 15 A | 20 A | 25 A | 30 A |
| Charging principle | Load switching per power module | | | | | |
| Autonomy time | Selectable over external battery cabinet | | | | | |
| STATIC BYPASS | | | | | | |
| Nominal voltage | 3 x 400 V (380, 415 V adjustable), 3 phase + neutral | | | | | |
| Frequency | 50 Hz / 60 Hz (adjustable) | | | | | |
| Synchronization range | ±0.1 – ±5 % (adjustable) | | | | | |
| Transfer time at mains outage | 0 ms (without interruption) | | | | | |
| Admissible overload | 175 % for 10 ms | | | | | |
| GENERAL DATA | | | | | | |
| Parallel mode | Up to 4 UPS (central battery possible) | | | | | |
| Audible noise | 62 – 69 dB(A) dependent on equipment installed and load state | | | | | |
| Operating temperature range/humidity | 0 – 40°C / <95 % (without condensation) | | | | | |
| Protection | IP20 | | | | | |
| Color | RAL 7035 | | | | | |
| Cable entry | Underside | | | | | |
| Environmental conditions | Free from corrosive air and conductive dust | | | | | |
| COMMUNICATION | | | | | | |
| Display | 320 x 240 graphical LCD display | | | | | |
| Alarm signals | Acoustic and visual | | | | | |
| Interfaces | Remote signal contact, RS232, 2 x communication slots for SNMP / Modbus / additional relay cards | | | | | |
| DIMENSIONS | | | | | | |
| Dimensions approx. D x W x H (mm) | 910 x 520 x 1165 | | | 975 x 520 x 1655 | | |
| Footprint (m ²) | 0.47 | | | 0.51 | | |
| Weight approx. | 139 kg | | | 204 kg | | |
| Weight approx. (incl. module) | 169 kg | 199 kg | 229 kg | 259 kg | 354 kg | 384 kg |

1) by THDv ≤2 %

PROTECT 3.M 2.0



Intelligent communication

Protect 3.M 2.0 contains a powerful communications module that readily supplies all relevant information (measurements, alarms and error messages). All information is supplied via an easy to use LCD screen

Large multi-language LCD screen

Languages supported:

- » German
- » English
- » French
- » Spanish
- » Portuguese
- » Italian
- » Turkish
- » Russian
- » Chinese

Interfaces

- » 6 integrated remote signal contacts
- » RS232 interface
- » Two expansion slots for additional remote signal contacts, MODBUS extension card and SNMP adapter

Battery Management

Each UPS power module contains its own battery charger with intelligent charging electronics. These can be adapted to the battery in use and facilitate the use of vendor independent standard batteries.

A temperature compensated charging curve ensures an optimum charging regime. Automatic testing informs you of the charging state of charge and when charging will be complete.

Protect 3.M 2.0 Customer Benefits

Modular concept

- » The UPS output can be easily adapted to any required performance parameters.
- » Rapid expansion by insertion of new modules at any time and without additional costs.
- » N+1 redundancy module increases reliability

Low maintenance costs

- » Module replacement in case of failure within the shortest possible time.
- » For multiple UPS devices, module exchange between units is possible.

High efficiency

- » Efficiency of 94% at 35% load
- » Better efficiency means less heat and thus lower running costs for air conditioning
- » Significant reduction of CO₂ emissions

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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