

# Power Safety

## Protect 8.33

Industrial High Power UPS

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Uninterruptible Power Supplies

3-Phase Input; 3-Phase Output  
160-500kVA



### Engineering is our Business

UPS solutions engineered by AEG Power Solutions have been protecting oil & gas infrastructure, power stations and other industrial installations for more than 60 years.

### Designed for all Industrial Applications

Protect 8., the latest new generation of our Protect UPS product range.

It is designed to meet the toughest product customization requirements:

- Specific mechanical protection degree
- Specific input & output voltage
- Specific battery and autonomy Time
- Desired documentation.

Benefit also from a guaranteed short lead time, extremely high electrical and mechanical robustness, high reliability and a small footprint.

### Protect 8. industrial Applications

- Oil & Gas (Petrochemicals Offshore, Onshore, Pipelines)
- Energy & Electricity generation (Power Generation, Transmission, Distribution)
- Water (Desalination, Treatment)
- Instrumentation & Process Control (Chemicals, Mining, Steel, Paper)
- Emergency Lighting
- All Industrial Applications.

PERFECT IN FORM AND FUNCTION

**AEG**

# Power Safety

## Protect 8.33

### Industrial High Power UPS

#### Complete Systems

Protect 8. is a true on-line double conversion UPS classified as VFI SS 111 according to IEC 62040-3.

- On-line operation ensures permanent service
- Microprocessor-driven control and command system provides reliable power supply
- Battery management system boosts battery life and cuts operating costs
- Broad range of output power ratings, battery autonomy times and options meet complex industrial applications needs
- High level protection for users and connected equipment (high intermittent overload capacity; high level short circuit strength)
- Excellent dynamic response easily high cyclic loads.

#### Unique Design

Protect 8. UPS configurations:

- Single systems
- Parallel systems
- Customized input/output voltages
- Text translations to any language.

Parallel operation for capacity and performance:

- Flexible Multi Master technology and Can-Bus communication up to 8 UPS to be connected in parallel for increased power, redundancy or system upgrade
- Parallel UPS can be operated with separated or central battery.

#### Key Features

High and constant efficiency even at low output power:

- Reduced operating costs
- Reduced air conditioning requirements
- Reduced battery Ah requirements.

Full digital control:

- High reliability (no potentiometers)
- High flexibility (software controlled parameters)
- Fast dynamic response.

Oversized components ensure:

- Higher reliability and MTBF
- High overload capacity.

Redundant control for high reliability:

- Separate microprocessors for rectifier, inverter, static switch and communication
- Separate, redundant power supplies for control cards.

Low maintenance cost

Ergonomic control unit with graphical display

Input isolation transformer

High short-circuit resistance

High EMC robustness compared to UPS Standard IEC 62040-2 by a factor of 2-to-3

Redundant and individually monitored fans

Floating 384V battery voltage for linking to existing DC bus bars (160 - 500kVA)

Intelligent battery management, test and status diagnostics

Compatible with all battery types:

- Vented lead acid
- Valve regulated lead acid (VRLA)
- Nickel cadmium.

Designed to operate with diesel generators

Additional system equipment:

- Bypass transformer
- Voltage stabilizer
- Maintenance bypass switch
- AC distribution panels
- Battery cubicles
- Explosion proof battery circuit breaker enclosures.

Full compatibility with all other AEG Power Solutions:

- Industrial DC systems
- Telecom systems.

## Three Phase Output

MODEL	P8.33-160	P8.33-220	P8.33-330	P8.33-400	P8.33-500
NOMINAL RATING (AT COS $\varphi$ 0.8 LAG) IN KVA	160	220	330	400	500

## RECTIFIER UNIT

Input nominal voltage	3 x 400 V (3 x 380 V, 3 x 415 V)				
Input operating range (min/max)	340 V–460 V				
Frequency	50/60 Hz $\pm$ 10%				
Input current in A at nominal load	259	357	535	649	811
Charging characteristic to IEC 478-10	IU				
Nominal DC voltage	384 V				
Rectifier type					
- Standard	6 pulse	12 pulse	12 pulse	12 pulse	12 pulse
- Optional	12 pulse				

## INVERTER UNIT

DC input	384 V $\pm$ 20%				
Nominal AC voltage	3x 400 V (3 x 380 V, 3 x 415 V)				
Output voltage static response	< $\pm$ 1%				
Output voltage dynamic response	< $\pm$ 2%				
Recovery time	2 ms				
Frequency	50/60 Hz				
Frequency tolerance without mains	$\pm$ 0.1%				
Frequency synchronisation range	$\pm$ 1% ( $\pm$ 2%, $\pm$ 3%)				
Allowable load power factor	0.0 lag to 0.0 lead				
Output phase current in A	231	318	477	578	723
Voltage wave form	sinusoidal				
Voltage distortion	<3%				
Crest factor	max. 3				
Overload response 1 min.	150%				
Overload response 10 mn.	125%				
Max short circuit current	> 3 x I nom				

## STATIC BYPASS SWITCH

AC voltage	3 x 400 V (3 x 380 V, 3 x 415 V)				
Frequency	50/60 Hz				
Nominal power in kVA	160	220	330	400	500

## GENERAL DATA

Efficiency (AC to AC) – typical	up to 94% / >98% with ECO-Mode				
Noise level depending on rating	up to 74dB(A)				
EMC compatibility	EN 62040-2				
Air cooling with redundant and monitored fans	Yes				
Operating temperature range min./max. (without de-rating)	-5°C / +40°C				
Storage temperature range min./max.	-30°C / +75°C				
Maximum altitude without de-rating	1000 m				
Protection degree IEC 529/EN 60529 standard system	IP20, IP22 & IP43 (>IP43 engineered)				
Equipment colour	RAL 7035				

## WEIGHTS AND DIMENSIONS

Height standard UPS (mm)	1910	1915	1915	1915	1915
Height with max. options (mm)	2015	2210	2210	2210	2210
Width (mm)	1800	2100	3300	3300	3300
Depth (mm)	960	960	960	960	960
Weight (kg)	2410	2900	3970	4380	4980

## Batteries

AEG Power Solutions has considerable in-house knowledge in battery technology and is able to offer expert advice on the specifying, selection, operation and testing of batteries. Our total system solutions include a wide range of products using lead acid and nickel-cadmium batteries in vented and gas recombination technologies. Replacement batteries can be supplied and installed by our Global Service Team.

### Protect 8. Family Highlights

- The new generation of AEG Power Solution UPS
- More than 60 years experience in UPS business summarized in Protect 8
- True on-line double conversion UPS (VFI SS 111)
- UPS designed for industrial applications
- Short lead time
- High robustness for harsh working environments
- Redundant controls for high reliability
- Small footprint
- High efficiency even at low output power
- Compatible with every type of battery
- Full digital control
- Top class communication platform.

## Services

With over 60 years of expertise in power systems and solutions, AEG Power Solutions is renowned for its unparalleled services and technical support in critical application environments. As the world class system provider, you can rely on a global network of 20 Services Centers supported by over 150 field engineers and more than 100 certified service partners around the world. From the power solution selection to your process installation and commissioning, our certified experts go beyond your expectations by offering service excellence that will ensure the lowest operational cost for your mission-critical equipment. The reliability of your installed power solution is supported by a Global Service Team renowned for its short response time and trouble shooting efficiency. Choosing one of the Pro Care™ Preventive Maintenance Options gives you the ultimate peace of mind reassuring complete cost control, security and uninterrupted power supply in utmost critical situations.

You can also benefit from a full range of professional services that will protect and ensure the durability of your investment and will take over when you need it the most:

- Pro Care™ Preventive Maintenance Options
- Turnkey solutions
- Installation & commissioning
- Maintenance services
- E-Service / remote monitoring
- 24/7 hotline
- Onsite training
- Hot swapping
- Onsite battery replacement
- Battery monitoring
- Facility and equipment management
- 24/7 global onsite contracts
- Power quality assessment
- Load bank & site capacity analysis
- Trouble shooting and repair.

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For further information  
please refer to our website:  
[www.aegps.com](http://www.aegps.com)

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