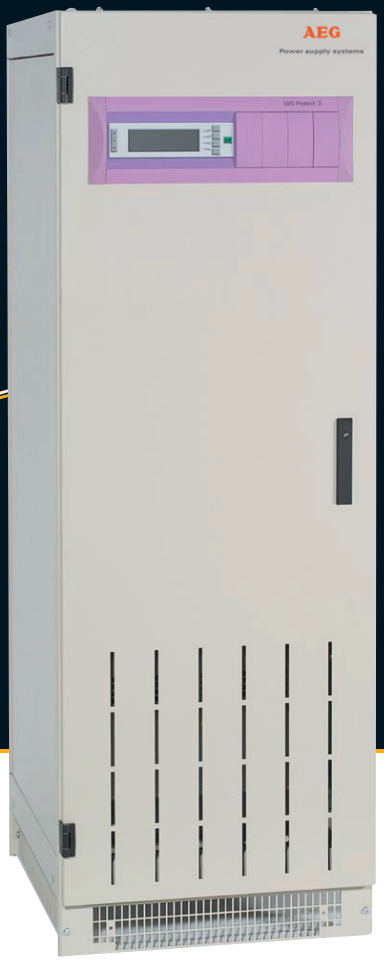
AEG

Power supply systems

PROTECT 3 INDUSTRIAL UPS

Protect 3.31 Single Phase output 10kVA – 60kVA
Protect 3.33 Three Phase output 10kVA – 120kVA
400V AC input
384V DC



Uninterruptible Power Supplies

Designed for all Industrial applications

- **Oil & Gas, Petrochemicals**
  Offshore, Onshore, Pipelines
- **Energy and Power**
  Generation, Transmission, Distribution
- **Transportation**
  Rail, Airports, Shipping
- **Water**
  Desalination, Treatment
- **Instrumentation & Process Control**
  Chemicals, Mining, Steel, Paper
- **All Industrial applications**

Engineering is our Business

UPS solutions engineered by AEG Power supply systems (a company of Saft power systems) have been protecting Oil & Gas infrastructure, Power Stations and other industrial installations for more than 50 years.
Protect 3 is just part of our Protector Product Range of true on-line UPS suitable for all Industrial applications. See also our Protect 4 and Protect 5 ranges.

Robust and Reliable

Protect 3 is extremely robust, both electrically and mechanically. It is custom-designed for use in harsh industrial environments. >>

>> PROTECT 3 INDUSTRIAL UPS

Key features

Full digital control
- High reliability (no potentiometers)
- High flexibility (software controlled parameters)
- Fast dynamic response

Ergonomic control unit with graphical display

High efficiency even at low output power
- Reduced operating costs
- Reduced air conditioning requirements
- Reduced battery Ah requirements

Oversized components
- Higher reliability and MTBF
- High overload capacity

Output isolation transformer
Standardized modules
Low maintenance
Short circuit resistant
More EMC robust than UPS Standard IEC 62040-2 by a factor of 2 to 3

Redundant controls
- Separate microprocessors for Rectifier, Inverter, Static Switch and Communication
- Separate and redundant power supplies for control cards

Redundant and individually monitored fans

Compatible with vented Lead Acid,
Valve Regulated Lead Acid (VRLA) and
Nickel Cadmium batteries

Intelligent Battery management, test and status diagnostics

Designed to operate with Diesel Generators

High protection degree (IP rating) possible
- Ready for harsh environment

Strong mechanical design

Remote monitoring and control capabilities (programmable)

Capable of communicating with computer and control systems (SCADA, ESD, DCS, BMS)
- Modbus
- Profibus
- Monitoring software
- Ethernet, SNMP...

System and alarm status via volt-free contacts

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

This outstanding UPS range features
- On-line operation ensuring permanent service
- Microprocessor-driven control and command system to provide reliable power supply
- A battery management system that boosts life time and cuts operating costs
- A broad range of output power ratings, battery autonomies and options to meet the needs of complex industrial applications.

The UPS offers a very high level of protection for users and connected equipment
- High intermittent overload capacity
- High level short circuit strength
- N-conductor with full loading capacity (3 phase systems)
- Excellent dynamic response can easily handle high cyclic loads.

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>> PROTECT 3 INDUSTRIAL UPS

Unique Design

Parallel operation for capacity and performance
Flexible Multi Master Technology and CAN bus communication enables up to 8 UPS to be connected in parallel for increased power, redundancy or system upgrade.

Parallel UPS can be operated with a central battery.

Three microprocessor control system
These microprocessors simultaneously monitor and control the rectifier, inverter and static switch units. This control has been specially designed to provide a problem-free power supply.

END TO END SOLUTIONS

Exact solutions engineered for each application.

Possible UPS configurations
- Single systems
- Parallel systems
- Other input/output voltages
- ...

Additional system equipment
- Bypass transformer
- Voltage stabilizer
- Maintenance Bypass Switch
- AC distribution panels
- Battery cubicles
- Explosion proof battery circuit breaker enclosures
- ...

Compatible with all other Saft power systems solutions: Industrial DC systems, Telecom systems,.....

Project Management
- Quality plan
- Project planning
- Progress reviews
- Manufacturing reviews
- Factory acceptance tests
- Site acceptance tests
- ...

Customized documentation
- Text translations to any language
- Document numbering
- ...

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SPECIFICATION

SINGLE PHASE OUTPUT

MODEL	P3.31-10	P3.31-20	P3.31-30	P3.31-40	P3.31-60
Nominal rating (at cos φ 0.8 lag) in kVA	10	20	30	40	60
RECTIFIER UNIT					
Input nominal voltage	3 x 400V (3 x 380V, 3 x 415V)				
Input operating range (min/max)	340V – 460V				
Frequency	50/ 60Hz ±10%				
Input current in A at nominal load	17	33	50	66	98
Charging characteristic to IEC 478-10	IU				
Nominal DC voltage	384V				
Rectifier type					
- Standard	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse
- Optional	Mains filter	Mains filter			
INVERTER UNIT					
DC input	384V ± 20%				
Nominal AC voltage	230V (220V, 240V)				
Output voltage static response	< ± 1%				
Output voltage dynamic response	< ±2%				
Recovery time	1 ms				
Frequency	50/ 60Hz				
Frequency tolerance without mains	± 0.1%				
Frequency synchronisation range	± 1% (±2%, ±3%)				
Allowable load power factor	0.0 lag to 0.0 lead				
Output phase current in A	43	87	130	174	261
Voltage wave form	sinusoidal				
Voltage distortion	≤ 3%				
Crest factor	max. 3				
Overload response 1 min.	150%				
Overload response 10 min.	125%				
Max Short circuit current	> 3 x I nom				
STATIC BYPASS SWITCH					
AC voltage	230V (220V, 240V)				
Frequency	50/ 60Hz				
Nominal power in kVA	10	20	30	40	60

GENERAL DATA

Efficiency (AC to AC) - typical	92%
Noise level depending on rating	< 55 – 65dB(A)
EMC compatibility	EN 60040-2
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	1000m
Protection degree to IEC 529/ EN 60529 (standard system)	IP20
Equipment colour	RAL 7032

WEIGHTS AND DIMENSIONS

MODEL	P3.31-10	P3.31-20	P3.31-30	P3.31-40	P3.31-60
Height standard UPS (mm)	1710	1710	1710	1710	1710
Height with max. options (mm)	1815	1815	1815	1815	1815
Width (mm)	600	600	750	1200	1200
Depth (mm)	735	735	735	735	735
Weight (Kg)	275	325	375	550	650

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SPECIFICATION

THREE PHASE OUTPUT

MODEL	P3.33-10	P3.33-20	P3.33-30	P3.33-40	P3.33-60	P3.33-80	P3.33-100	P3.33-120
Nominal rating								
(at cos φ 0.8 lag) in kVA	10	20	30	40	60	80	100	120
RECTIFIER UNIT								
Input nominal voltage	3 x 400V (3 x 380V, 3 x 415V)							
Input operating range (min/max)	340V – 460V							
Frequency	50/ 60Hz ±10%							
Input current in A at nominal load	17	33	50	66	98	130	163	195
Charging characteristic to IEC 478-10	IU							
Nominal DC voltage	384V							
Rectifier type								
- Standard	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse	6 pulse
- Optional	Filter	Filter	Filter	Filter	Filter	12 pulse	12 pulse	12 pulse
INVERTER UNIT								
DC input	384V ± 20%							
Nominal AC voltage	3x 400V (3 x 380V, 3 x 415V)							
Output voltage static response	< ± 1%							
Output voltage dynamic response	< ± 2%							
Recovery time	1 ms							
Frequency	50/ 60Hz							
Frequency tolerance without mains	± 0.1%							
Frequency synchronisation range	± 1% (±2%, ±3%)							
Allowable load power factor	0.0 lag to 0.0 lead							
Output phase current in A	14	29	43	58	87	116	145	173
Voltage wave form	sinusoidal							
Voltage distortion	≤ 3%							
Crest factor	max. 3							
Overload response 1 min.	150%							
Overload response 10 min.	125%							
Max Short circuit current	> 3 x I nom							
STATIC BYPASS SWITCH								
AC voltage	400V (380V, 415V)							
Frequency	50/ 60Hz							
Nominal power in kVA	10	20	30	40	60	80	100	120

GENERAL DATA

Efficiency (AC to AC) - typical	94%
Noise level depending on rating	<55 – 65dB(A)
EMC compatibility	EN60040-2
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	1000m
Protection degree to IEC 529 / EN 60529 (standard system)	IP20
Equipment colour	RAL 7032

WEIGHTS AND DIMENSIONS

MODEL	P3.33-10	P3.33-20	P3.33-30	P3.33-40	P3.33-60	P3.33-80	P3.33-100	P3.33-120
Height standard UPS (mm)	1710	1710	1710	1710	1710	1710	1710	1710
Height with max. options (mm)	1815	1815	1815	1815	1815	1815	1815	1815
Width (mm)	600	600	600	600	750	1200	1200	1200
Depth (mm)	735	735	735	735	735	735	735	735
Weight (Kg)	350	370	450	470	550	800	900	900

BATTERIES

Saft power systems 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.

SERVICE

Saft power systems Global Services offer the following services to support all Industrial Power Supply Products:

Product Services

Installation & Commissioning
Preventative Maintenance
Spare Part Kits
Refurbishments
Service Contracts – 24/7 Global Service Cover
Training

Site Services

Battery Replacement
Load Bank & Site Capacity Tests
Power Quality Services
Standby generators and other essential equipment hire and supply
E-service/remote Monitoring
Battery Monitoring
Facility & Equipment Management
Design & Build - Turnkey Solutions

Power Systems
Whenever wherever wattever

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