

Power Safety

Protect 5. Industrial UPS

Protect 5.31 NA single-phase output 10 kVA – 120 kVA
480 VAC input
220 VDC
Uninterruptible Power Supplies

Specially designed for all industrial applications with

- 480 VAC rectifier input voltage
- 120 VAC SBS and output voltage
- 220 VDC battery voltage (Pb/NiCd)
- Oil & Gas, Petrochemicals
Offshore, Onshore, Pipelines
- Energy and electricity generation
Generation, Transmission, Distribution
- Water
Desalination and Treatment

Technical development

For over 60 years, UPS solutions developed by AEG Power Supply Systems – a Saft Power Systems company – have been protecting industrial infrastructures and critical electricity supply systems. The Protect 5.31 – NA is a further development of the tried-and-tested Protect 5. series, specially designed for applications with 480 & 120 VAC voltages. It uses standardised components, has a robust mechanical and electrical structure and is optimally prepared for the range of applications.



PERFECT IN FORM AND FUNCTION

AEG

Power Safety

Protect 5. 5.31-NA

Main features

Complete system

The Protect 5. is a true online double conversion UPS, classified as VFI SS 111 acc. to IEC 62040-3.

Fully digital controller

- High level of reliability (no potentiometers)
- High level of flexibility (parameters controlled by software)
- Fast dynamic response

Ergonomic operating unit with graphic display

High efficiency even in part-load range

Redundant control elements

- Separate microprocessors for rectifier, inverter, static bypass switch and communication
- Separate and redundant power supplies for controller cards

Components designed with a wide reserve margin

- Greater reliability and MTBF
- High overload capacity

Output isolating transformer

Standardised modules

Low maintenance

Resistant to short circuits

Surpasses the EMC requirements of UPS-standard IEC 62040-2 by a factor of 2 to 3

Redundant and individually monitored fans

Potential-free battery voltage of 220 V for connecting to existing DC busbars

Compatible with vented lead acid batteries, valve regulated batteries (VRLA), as well as NiCd batteries

Intelligent battery management, test and status diagnosis

Designed for operation with diesel generators

High index of protection (IP rating) possible

- Ready for demanding surroundings

Robust mechanical design

- Earthquake-proof (optional)

Functions for remote monitoring and control (programmable)

Communication capability with computer and control systems (SCADA, ESD, DCS, BMS)

- ModBus
- Profibus
- Monitoring software
- Ethernet, SNMP ...

System and alarm status via voltage-free contacts

Single - Phase output

MODEL	P5.31-10	P5.31-20	P5.31-30	P5.31-40	P5.31-60	P5.31-80	P5.31-100	P5.31-120
Nominal output (at cos ϕ 0.8 lagging) in kVA	10	20	30	40	60	80	100	120

RECTIFIER UNIT

Nominal input voltage	3 x 480 V							
Operating range, input (min./max.)	408 V-552 V							
Frequency	60/50 Hz \pm 10 %							
Input current in A at nominal load	13	29	47	57	83	112	139	167
Charging characteristic acc. to IEC 478-10	IU							
Nominal DC voltage	220 V							

RECTIFIER TYPE

- Standard	6 pulse	6 pulse	12 pulse	12 pulse	12 pulse	12 pulse	12 pulse	12 pulse
- Optional	Mains filter	Mains filter						

INVERTER UNIT

DC input	220 V \pm 20 %							
Nominal AC voltage	120 V							
Output voltage, static response	$< \pm$ 1 %							
Output voltage, dynamic response	$< \pm$ 2 %							
Recovery time	2 ms							
Frequency	60/50 Hz							
Frequency tolerance without mains	\pm 0.1 %							
Frequency synchronisation range	\pm 1% (optional \pm 2%, \pm 3%)							
Power factor permitted load	0.0 lead - 1 - 0.0 lag							
Output phase current in A	83	167	250	334	500	667	834	1000
Voltage curve	sinusoidal							
Voltage distortion	\leq 3 %							
Crest factor	max. 3							
Overload capacity 1 min	150 %							
Overload capacity 10 min	125 %							
Maximum short circuit current	2,7 x I nom							

STATIC BYPASS SWITCH

Nominal AC voltage	120 V							
Frequency	60/50 Hz							
Nominal output in kVA	10	20	30	40	60	80	100	120

GENERAL DATA

Efficiency (AC - AC)*	approx. 90 %							
Noise level depending on power*	$<$ 55 - 70 dB (A)							
EMC compatibility	EN 62040-2							
Air cooling with redundant and monitored fans	yes							
Operating temperature range min./max.	-5° C / +40° C (without reduction in output)							
Storage temperature range min./max.	-30° C / +75° C							
Max. installation altitude	1000 m (without reduction in output)							
Index of protection acc. to IEC 529 / EN 60529 (standard system)	IP20, max. IP43							
Device colour	RAL 7035							

WEIGHTS AND DIMENSIONS

Height standard UPS (mm)	1810	1810	1810	1810	1810	1810	1810	1810
Height with max. options (mm)	2015	2015	2015	2015	2015	2015	2015	2015
Width (mm)	600	900	1200	1200	1200	2100	2100	2100
Depth (mm)	860	860	860	860	860	860	860	860
Weight (kg)*	350	500	750	750	1100	1400	1700	1700

*Note: Preliminary Data

Batteries

Saft Power Systems possesses extensive in-house experience in battery technology and looks forward to providing you with expert technical advice for specifying and selecting batteries as well as operating and testing. Our complete system expertise encompasses a broad range of products with lead acid and nickel-cadmium batteries in vented and gas recombination technologies. Replacement batteries can be obtained from our globalservice team, which also installs batteries.

Service

Global service from Saft Power Systems offers the following service and support solutions for all industrial electricity supply systems:

Product service

- Installation & Commissioning
- Preventative maintenance
- Spare parts kits
- Refurbishments
- Service contracts - global service round the clock
- Training courses

Site services

- Battery replacement
- Load bank and site capacity tests
- Loan and provision of back-up generators and other important units
- E-service/remote monitoring
- Battery monitoring
- System and equipment management
- Design and implementation - turnkey solutions

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