

PROTECT 8 PLUS

Industrial UPS with PFC rectifier
10 – 40 kVA



Industrial-grade UPS with a building block architecture

The Protect 8 PLUS from AEG Power Solutions is the extension of the existing and proven Protect 8 AC Uninterruptible Power Supply (UPS) family. It combines the state-of-the-art double conversion topology with a new IGBT rectifier to offer greater performances. Associated with an external stand-by battery, the system ensures continuous availability of power and safe operation for all types of critical loads in industrial environments. Protect 8 concept is continuously further developed, as we learn through experience. With an expected lifetime of at least 20 years, the Protect 8 is a robust and cost-effective solution, optimized for minimal operating costs.

Typical applications

Protect 8 PLUS is a reliable and robust AC UPS solution to protect the critical processes of the following industries:

- Oil & Gas exploration and production
- Petrochemical and refining
- Transportation infrastructures
- Water treatment
- Continuous manufacturing
- Other heavy industry

FEATURES

- Full-IGBT architecture with latest generation of IGBTs for better thermal and operation performances
- Bi-direction rectifier-charger to perform battery discharge through the input mains network
- Input PF up to 0.99, THDi \leq 5%
- Available as 1-phase or 3-phase output
- High output short-circuit clearance capability
- Optional N+1 fan redundancy
- Hot-swappable fans for easy maintenance
- Built-in output galvanic isolation as standard
- Optional input galvanic isolation (according to configuration)
- Full set of electrical and communication options

BENEFITS

- **CAPEX savings:** Protect 8 PLUS allows the optimization of the architecture and the cost of the upstream distribution network (transformer, circuit breakers, cables) thanks to its high input power factor, reduced THDi (current Total Harmonic Distortion) and to its unique and patented (patent filled) pre-charge circuit that drastically limits the inrush current.
- **OPEX savings:** The IGBT rectifier of the Protect 8 PLUS allows to perform battery discharge tests into the mains, without the need to rent an external load bank. In addition, the front access to all major replaceable components eases maintenance operations.
- **JIP33 compliance:** Protect 8 PLUS meets the requirements of the specification S-701 from the Joint Industry Program JIP33, conducted by the International Association of Oil & Gas producers (IOGP).
- **Highly flexible configuration:** As part of the Protect 8 AC UPS family, Protect 8 PLUS employs the Protect 8 building block design to easier meet customization requirements.

Specifications

RANGE				
	Ratings (kVA @ PF 0.8), 1-phase or 3-phase output			
216 Vdc	10	20	30	40
384 Vdc	-	-	-	40 (3-ph output only)
RECTIFIER INPUT				
Nominal AC voltage [V]	400 V (380 V, 415 V)			
Input phases	3ph or 3ph + N			
Input voltage tolerance	+10 % / -10 % (with 400 V input)			
Input frequency range	50 / 60 Hz (factory settings) ±5 %			
Rectifier Type	IGBT			
Input power factor	Up to 0.99			
Inrush current	≤ 2 x I _{nominal}			
Isolation transformer	In-built on 216 Vdc, Optional on 384 Vdc			
Recommended type of input protection	Circuit breaker, tripping characteristics D			
Maximum allowed voltage distortion (THDv) from mains	8 %			
RECTIFIER-CHARGER OUTPUT				
DC voltage stability	±1 %			
DC voltage ripple in float (battery connected)	≤ 0.25 % (RMS)			
INVERTER OUTPUT				
Nominal output voltage	1 x 230 Vac or 3 x 400 Vac			
Nominal output frequency	50/60 Hz (factory settings)			
Overload at Cos φ = 0.8	125 % (10 min) / 150 % (1 min)			
Isolating transformer	In-built			
Short circuit capacity (1-phase output)	350 % (500 ms)			
Short circuit capacity (3-phase output)	200 % (500 ms)			
Voltage stability:				
- Voltage response, static (for 100% load variation)	±1 %			
- Voltage response, dynamic (for 100% load variation)	±2 %			
Frequency slew rate	0.1 (Hz/s)			
Frequency stability:				
- with internal clock	±0.1 %			
- with reserve supply synchronisation	±1 % (±2 %, ±3 %)			
Voltage distortion:				
- with 100% linear load	< 3 %			
- with 100% non-linear load	≤5 % (non linear load defined by IEC 62040)			
Output crest factor	max 3			
Load power factor	capacitive to inductive over entire Cos φ range			
STATIC BYPASS SWITCH				
Bypass supply input voltage	1 x 230 Vac (with 1-ph output) or 3 x 400 Vac (with 3-ph output)			
Bypass supply input voltage tolerance	±10 %			
Bypass supply input frequency	50/60 Hz (factory settings)			
Bypass supply input frequency tolerance	±5 %			
Static bypass switch short-circuit capacity	1000 % (50 ms)			
GENERAL DATA				
AC/AC Efficiency	Up to 90 % (double conversion)			
Degree of protection	external: IP21 (option up to IP42) / internal: IP20			
Noise level depending on rating	< 65 dB (A)			
Color	RAL 7035			
Operation temperature	-10 °C to 40 °C			
Storage temperature	-30 °C to 75 °C			
Maximum altitude without derating	1000 m			
STANDARDS				
Safety	IEC 62040 - 1			
EMC immunity and emission	IEC 62040 - 2			
Performance	IEC 62040 - 3			
CE marking	Yes			

AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on: www.aegps.com