

PROTECT^{PLUS} S400

Three phase transformerless full IGBT UPS
From 20 to 80 kVA

High performance, compact size and
strong reliability



Compatible with **LI-ION**



Protect Plus S400 is the new transformerless UPS from AEG Power Solutions, best in class system for its compact footprint and flexible configurations.

Thanks to its full IGBT double-conversion technology (VFI-SS-11), Protect Plus S400 combines low input THDi with close to unity input power factor. The system also operates in ECO mode, achieving efficiency over 99%.

Protect Plus S400 provides high-level power protection for critical applications where power quality, power consumption, availability, reliability and installation & service space are key parameters.

By combining excellent performance, industry-leading battery charging power and compact footprint, this UPS ensures power quality for even the most sensitive critical loads.

Typical applications

For this UPS the typical market applications are:

- Transportation
- Building infrastructure
- Manufacturing
- Data & IT

FEATURES

- Transformer-less and full IGBT architecture
- Classification VFI-SS-11
- Output power factor up to 1
- AC/AC efficiency > 95% (VFI) and > 99% in VFD
- Flexible battery solutions: VRLA & Li-Ion
- High battery charging current
- High MTBF and low MTTR
- User friendly HMI
- Optional SNMP, Modbus and relay card
- Back feed protection
- Parallel operation up to 4 units
- Frequency converter option
- Compact cabinet, S model, with high charging current and external battery cabinet
- Standard cabinet, STD model, with integrated battery
- Optimized Battery Management
- Wide range of options
- Individual and common battery compatibility
- Integrated mains input, bypass input, output and maintenance bypass switches
- Integrated battery breakers in the STD model

BENEFITS

- **Easy installation, operation and maintenance:** front-access to the main components, for easy maintenance or inspection. Parallel upgrade is easy and simple.
- **Unity output PF:** 1 kVA = 1 kW
- **Powerful charger** for high-capacity batteries configuration for long backup times.
- **Maximized savings** in terms of footprint (m²), installed power (kVA), electrical system (cabling and protection devices), availability and reliability (MTTR and MTBF), power management (kW vs cost)
- **Full control and parameters setting** through the display
- **Ultra-flex UPS:** go standalone or parallel, internal or external batteries, individual or common battery or configure it your own way.

PROTECT^{PLUS} S400

20 ÷ 80kVA, S model, accessories

Our new three-phase Protect Plus S400 is designed not only for outstanding performance and reliability, but also for maximum adaptability.

A comprehensive range of accessories allows for full customization of your power protection system, enabling advanced monitoring, communication, and battery management.

These accessories are engineered to integrate seamlessly into critical infrastructure, providing enhanced safety, visibility, and control.

To meet the diverse needs of modern infrastructure, our Protect Plus S400 supports a full suite of optional accessories, grouped into two main categories:

- **Connectivity accessories:** designed to enhance communication, monitoring, and integration with external systems.

- **Mechanical accessories:** developed to improve the physical protection and adaptability of the UPS in different environmental conditions.

This modular approach allows for complete customization, ensuring your power system is precisely tailored to your technical and environmental requirements.

CONNECTIVITY

AEG Network Card



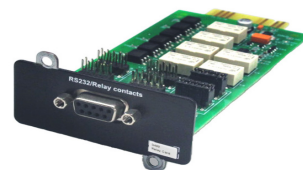
Enables remote monitoring and management of the UPS over using the SNMP protocol. It allows real-time status updates, automated alerts, and integration with existing network management systems for proactive response to power events.

S400 ModBus Card



Provides seamless communication via Modbus protocol. This card allows for real-time data exchange, detailed diagnostics, and enhanced control within industrial automation environments.

S400 Relay Card



Offers programmable dry contacts to signal key UPS events such as alarms, battery operation, bypass mode, and system faults. It's ideal for interfacing with external systems such as PLCs, alarms, or indicator panels, ensuring immediate and reliable feedback on the UPS operating status.

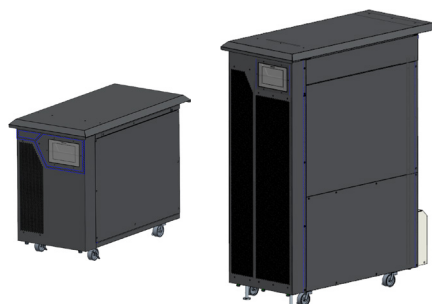
S400 Battery Temp Sensor



Monitors the temperature of external battery packs to ensure optimal charging conditions. By adjusting the charging parameters based on actual temperature, it helps extend battery life, prevent overheating, and maintain peak battery performance.

MECHANICAL

IP21 Protection Kit



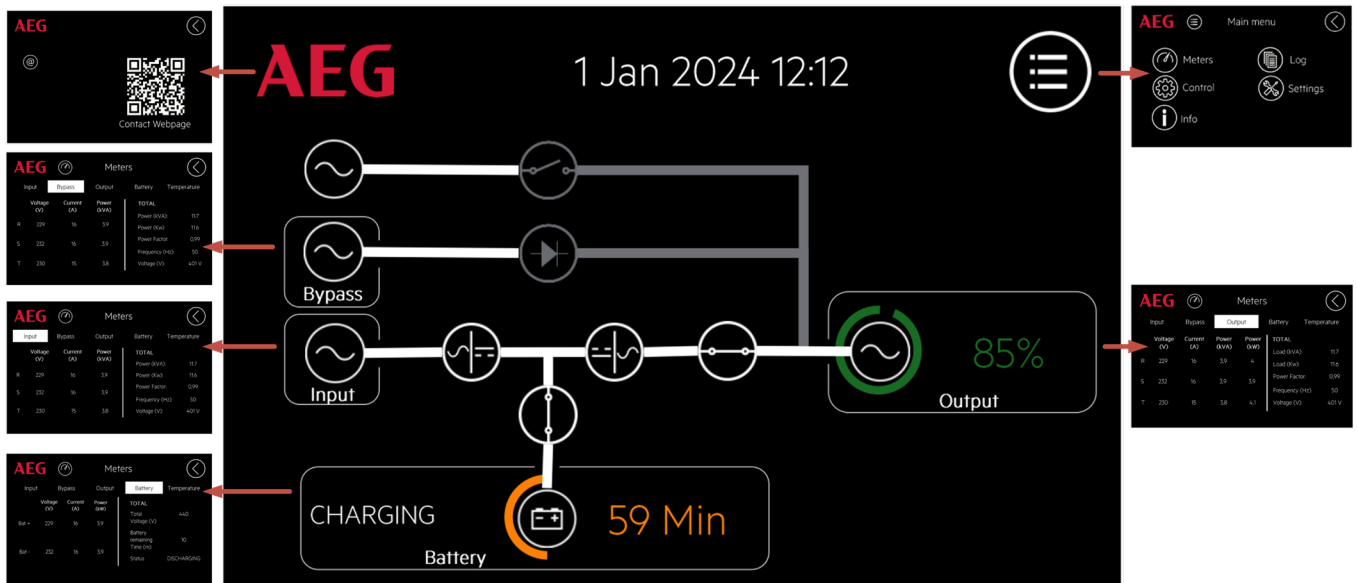
This mechanical accessory enhances the UPS's environmental protection by increasing its ingress protection rating to IP21, safeguarding internal components from solid objects and vertical water drops. Especially suitable for installation in light industrial or semi-controlled environments.

PROTECT_{PLUS} S400

20 ÷ 80kVA, S model, HMI

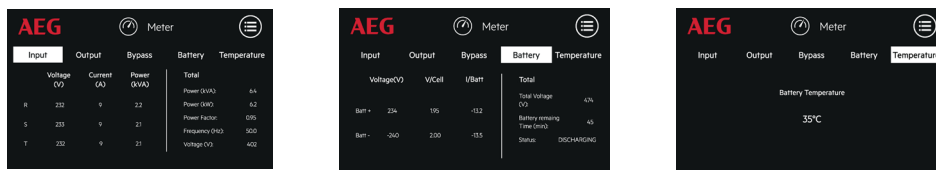
The integrated 5-inch touchscreen HMI redefines user interaction with the UPS, combining easy of use, clarity, and functional actions. Through its modern design and clear graphical layout, the HMI empowers users to monitor system status in real-time, adjust settings with precision, and respond promptly to events.

HMI Overview: UPS Control & Monitoring



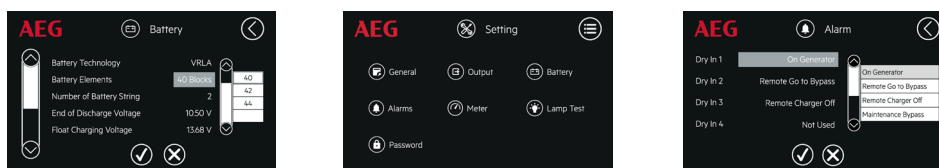
This screen provides direct access to the main operating modes, allowing users to start, stop, or change the UPS operating status with a single touch. It also displays real-time data such as load levels, battery status, alarms, and input/output conditions. From here, users can access all key UPS functions for efficient daily operation and immediate system feedback.

Meters: Input / Bypass / Output / Battery / Temperature



This section of the HMI displays detailed electrical measurements in real time, covering: input, bypass, output, battery and temperature. Clear sections and numeric values allow for instant visual diagnostics, helping users ensure that the system operates within safe and optimal parameters.

UPS Settings



Users can customize key operating parameters of the UPS. Available options include battery technology, battery elements, and discharge/charge voltages. For this UPS, it is possible to select either VRLA or Lithium-Ion battery technology. The Dry-in configuration gives the possibility to configure: On Generator, Remote Go to Bypass, Remote Charger Off, Maintenance Bypass, Remote UPS On, Remote UPS Off.

Specifications

PROTECT^{PLUS} S400

POWER RATING	20 KVA	30 KVA	40 KVA	60 KVA	80 KVA
Rated power (kVA / kW)	20/20	30/30	40/40	60/60	80/80
Classification	VFI-SS-11				
S MODEL					
Article number	30006922	30006923	30006924	30006925	30006926
Dimensions W x D x H (mm)	330 x 654 x 525			330 x 760 x 977	
Weight (kg)	45	48		96	
STD MODEL					
Article number	30007624	30007625	30007612	30007626	30007627
Dimensions W x D x H (mm)	500 x 850 x 887			500 x 850 x 1500	
Weight (kg)	240	340		530	630
Batteries number (12 V, 9 Ah)	1 x 40	2 x 40		3 x 40	4 x 40
STD MODEL (WITHOUT BATTERIES)					
Article number	30007628	30007629	30007630	30007631	30007632
Dimensions W x D x H (mm)	500 x 850 x 887			500 x 850 x 1500	
Weight (kg)	140			230	
CABINET COLOR					
Color	RAL 9005				
MAINS INPUT LINE (RECTIFIER)					
Phases	3 Ph + N + G				
Rated input voltage (V)	230 (phase to neutral) / 400 (phase to phase)				
Voltage range (V) (ph-n / ph-ph)	116 ÷ 190 / 200 ÷ 329 @ 50% load 190 ÷ 276 / 329 ÷ 478 @ 100 % load				
Frequency (Hz)	50 / 60				
Frequency range (Hz)	40 ÷ 72				
Input power factor	0,99 (100 % rated resistive load, rated voltage and frequency)				
Input THDi	< 3 % (100 % rated resistive load, rated voltage and frequency)				
BYPASS INPUT LINE					
Nominal bypass input voltage (V)	230 (phase to neutral) / 400 (phase to phase)				
Bypass input voltage range (ph-n / ph-ph)	195 ÷ 264 / 338 ÷ 457				
Bypass input frequency (Hz)	50/60				
Overload capacity (through static bypass line)	≤ 115% continuously; 115% ÷ 130% for >10 min; 130% ÷ 150% for >1 min; > 150% for >500 msec				
OUTPUT LINE (INVERTER)					
Rated output voltage (V) (ph-n / ph-ph)	230 / 400 (220 / 380 or 240 / 415 selectable)				
Rated output frequency (Hz)	50 / 60				
Phases	3 Ph + N				
Output THDv (according to IEC EN 62040 – 3)	< 2 % (linear load), < 5 % (non linear load)				
Synchronization output frequency with bypass (Hz)	46 ÷ 54 (for 50 Hz system), 56 ÷ 64 (for 60 Hz system)				
Output power factor	1				
Overload capacity through inverter line (online mode)	102 % ÷ 110 % load with transfer to bypass after 60 minutes 110 % ÷ 125 % load with transfer to bypass after 10 minutes 125 % ÷ 150 % load with transfer to bypass after 1 minute >150 % load with transfer to bypass after 150 msec				
EFFICIENCY (100 % LOAD)					
Online mode (VFI)	95,34 %	95,81 %	95,53 %	95,71 %	95,58 %
Eco mode (VFD)	99,08 %	99,14 %	99,08 %	99,18 %	99,06 %
BATTERY LINE					
Nominal Battery voltage (V) (default setting)	480 (± 240)				
Battery voltage range (V) (default settings)	320 ÷ 647 (S model); 401 ÷ 588 (STD model)				
Number of batteries in series	32 ÷ 44 (S model); 40 (STD model)				
Maximum charging current (A)	20	30	40	60	80
USER INTERFACE AND COMMUNICATIONS					
Display	5" touch screen LCD, up to 9 languages				
Standard communication ports	RS232 (DB9), USB (type B)				
Optional connectivity cards	SNMP, Modbus, dry contact and temperature sensor				
ENVIRONMENT					
Operating temperature (°C)	0 ÷ 40 (without derating), 40 ÷ 50 (with derating)				
Storage temperature (°C)	-25 ÷ 70				
Relative humidity	5 % ÷ 95 %				
Noise in online mode with 75 % load (dB)	≤ 63			≤ 65	
STANDARDS AND CERTIFICATIONS					
Safety, EMC, testing and performance	IEC EN 62040 – 1, IEC EN 62040 – 2, IEC EN 62040 – 3				

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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