

PROTECT PV

Utility-scale Inverter

Solar Inverter for Grid Connection
Utility Scale
690, 880, 1000 kVA



The Solar Inverter Protect PV product line designed by AEG Power Solutions offers professional solutions for utility-scale applications on industrial roofs and ground area installations. A key feature of the PV product line is its power stack with advance-design measuring and control technology enabling DC input voltages of up to 1000 VDC. Thin-film modules can therefore be used efficiently and savings made on wiring costs.

The combiner boxes can be designed as required with up to 6 input fuses available (PV 690 – PV 1000 8 pcs., positive and negative). The AEG PS solution entitled “active earthing” provides for a safer application of module technologies that require electrical grounding for operation. Another option called “copain mode” is available in which two units operate as a highly efficient team (master/slave functionality).

Maximum Power Point Tracking is designed to meet the latest requirements for quick responses to dynamic weather conditions such as spontaneous cloud cover on a clear day, and reliable day/night detection (active/passive).

With an efficiency factor of 98.85 % according to the European standard 50530, the Protect PV 880 for example well exceeds expectations for its power class. With an appropriate transformer, it can be connected to the medium voltage grid (MV, e.g. 10, 20 kV).

Monitoring and power plant integration is based on Modbus Protocol and advanced CAN BUS communication as well as via optic fiber and ethernet between the containers. This allows for cost-effective, safe and reliable remote monitoring and control of the PV plant. The monitoring and control system can be integrated into an overriding power station control technology. Because of the open structure, future requirements of the grid operators can also be taken into account.

This communication structure enables the operator to carry out continuous monitoring, failure analysis, reporting and performance statistics. Remote monitoring and remote access are available via GSM, DSL and WebPortal, for example, and programmable alarm functions via email/SMS settings.

Turnkey container solutions in different power classes integrate all necessary components and can be supplied ready for connection to the power plant on site.

With over 60 years of experience in power supply systems and solutions for power plants, AEG Power Solutions offers a comprehensive range of services aimed at securing maximum yields for your PV power installation. These services include contractual solutions with service guarantees and high inverter availability.

Specifications

PROTECT	PV 690	PV 880	PV 1000
DC INPUT			
Recom. PV power ^{*1}	630 – 890 kWp	800 – 1150 kWp	640 – 1500 kWp
DC voltage window	465 – 1000 V	486 – 1000 V	547 – 1000 V
Max. DC voltage		1000 V	
Extended U _{MPPPT} voltage range	465 – 1000 V	486 – 1000 V	547 – 1000 V
U _{MPPPT} voltage range @ 50 °C (EN 50530)	550 – 820 V	573 – 820 V	632 – 820 V
Max. DC current	1170 A	1440 A	1600 A
Quantity DC inputs		1 MccB	
Quantity DC fuses		up to 8 pcs. (pos. & neg.)	
Over voltage protection		Grade 2	
AC OUTPUT			
Nom. AC power at cos φ = 1 (@ 50 °C)	630 kVA	800 kVA	910 kVA
Nom. AC power at cos φ = 1 (@ 25 °C)	690 kVA	880 kVA	1000 kVA
Power factor, adjustable		lag 0.9 – 1 – lead 0.9	
Output voltage without transformer	345 V	360 V	405 V
Max. AC current	1159 A	1411 A	1426 A
MV-connection ^{*2}		10, 20 kV and other, as required	
Mains frequency		50/60 Hz	
Current distortion		<3%	
Over voltage protection		Grade 2	
GENERAL DATA			
Efficiency ^{*3} (Max. Euro CEC)	98.4 % 98.2 % 98.2 %	98.9 % 98.6 % 98.7 %	98.9 % 98.6 % 98.7 %
External power supply		TN-S, 230 V 50/60 Hz	
Operating temperature		-20 °C to +50 °C	
Rel. humidity		15 ... 95 % max., non condensing	
Protection grade, EN 60529		IP20	
Altitude above sea level		1500 m (3000 m max. 40 °C)	
Dimensions (W x H x D)		2700 x 1800 (+230 fans) x 600 mm	
Weight	approx. 1800 kg	approx. 1850 kg	approx. 1850 kg
Equipment color		RAL 7035	
CE Certificate		Yes	
Grid monitoring		according to FNN (VDN, BDEW) and corresponding to local requirements	
ALARM & CONTROLS			
Earth fault monitoring		Yes	
Over voltage protection		Yes	
Contact and breaker position		Yes	
Emergency power off		Yes	
Failure indicators (acoustic/optical)		3 status LED, detailed history	
COMMUNICATION			
Display		240 x 64 graphical LC Display and 4 display keys	
Hardware		RS 485, RS 232, CAN BUS, Ethernet Freely programmable opto coupler inputs and dry contacts	
Telecom line		ISDN, GSM, GPRS, DSL	
Software/protocol		Modbus, Profibus DP, WebPortal, CANopen CiA 437	
Over voltage protection		Option	
OPTIONS			
Container solution		Yes	
MV transformer		Yes	
MV switchgear		Yes	
String monitoring		Yes	
PV plant control		Yes	
"Copain" mode (Team-Master/Slave)	Yes	No	No

*1: Depending on local environmental conditions - *2: External transformer necessary

*3: Without transformer (LV/MV) - Technical data is preliminary and subject to change without prior notice.

AEG Power Solutions

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