

PROTECT PV

UTILITY-SCALE INVERTER

Solar Inverter for Grid Connection
560, 690, 880 kVA

Special edition for South Korea



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.510 - PV.910 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.910 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 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.

PROTECT PV

TECHNICAL DATA

	Protect PV.510-KOR	Protect PV.710-KOR	Protect PV.910-KOR
DC INPUT			
Recommended PV Power ^{*1}	500 - 680 kW _p	630 - 890 kW _p	800 - 1150 kW _p
DC voltage window (@ nom AC voltage)	385 - 1000 V	465 - 1000 V	486 - 1000 V
Max. DC voltage	1000 V		
Extended U _{MPPPT} voltage range	385 - 1000 V	465 - 1000 V	486 - 1000 V
U _{MPPPT} voltage range @ 50 °C (EN50530)	500 - 820 V	550 - 820 V	573 - 820 V
Max. DC current	1060 A	1170 A	1440 A
Quantity DC fuses	up to 8 pairs (pos & neg)		
Over voltage protection	Grade 2		
AC OUTPUT			
Nom. AC power at cos phi = 1 (@ 50 °C)	510 kVA	630 kVA	800 kVA
Nom. AC power at cos phi = 1 (@ 25 °C)	560 kVA	690 kVA	880 kVA
Power factor, adjustable	lag 0.9 – 1 – lead 0.9		
Output voltage without transformer	283 VAC	345 VAC	360 VAC
Output Current w/o transformer (max) @ 25 °C	1144 AAC	1159 AAC	1411 AAC
MV-connection ^{*2}	Option, as required		
Mains frequency	50/60 Hz		
Current distortion	< 3 %		
Over voltage protection	Grade 2		
GENERAL DATA			
Efficiency ^{*3} (Max. / Euro / CEC) (approx.)	98.4 %/98.2 %/98.2 %		98.9 %/98.6 %/98.7 %
External auxiliary 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	1,500 m (3000 m max 40 °C)		
Dimensions (W x H x D) ^{*1}	2700 x 1800 (+230 fans) x 600 mm		
Weight ^{*1}	approx. 1650 kg	approx. 1800 kg	approx. 1850 kg
Equipment color	RAL 7035		
CE Certificate	Yes		
Grid Codes	KERI, FNN (VDN, BDEW) and corresponding to local requirements		
ALARM & CONTROLS			
Earth fault monitoring	Yes	On request	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		
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, Web portal, 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

*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.

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For further information
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