

String Inverters

E24™

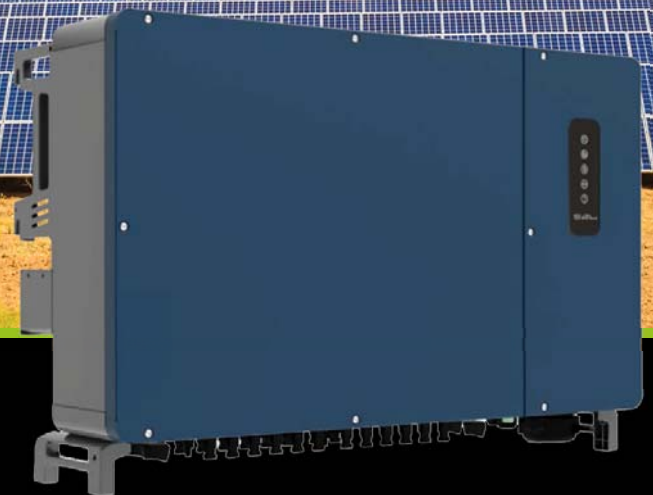
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E24 String Inverters

The E24 String inverters are the latest state of the art technology for the deployment of large solar powered arrays with minimal investments.

String inverters allow to connect large number of PV strings in high DC voltage directly to the inverter without combiners. The Inverters are positioned directly on the field in a dicentralized topology minimizing cabling and avoiding the risks of failure of a central inverter.





String Inverters

The 1,500-volt string inverter from E24 enables the virtual central inverter concept: In the past, large solar power plants have exclusively used central inverters, usually between 2.5 and 3 megawatts. For solar power system designers, it was a logical choice.

The disadvantage of such a topology, is that if you lose the central inverter or one of the central inverters, you lose multi-megawatts of power leading to substantial losses in productivity. Repairing central inverters is at least 3 to 4 days that is if the parts and qualified labor are available on the field which typically is never the case.

String inverters, by contrast, are lower-cost than central inverters and sufficiently lightweight to require neither a crane to lift in and out of place nor a concrete pad to rest on. Because string inverters are relatively low capacity, when one fails it doesn't have a large impact on generation.

Another disadvantage is that large and heavy central inverters have high installed costs because they have to be mounted on concrete pads and often require the use of a cranes to install them and maintain them which completely illiminated with string inverters:

String are installed on the same metallic structures used for solar panels.

Another problem with Central inverters is uncertainty: You can run into a situation, which has come up in the last few years, where an inverter company goes out of business and then you still have to maintain an obsolete system for the 20 or 25 years of the project.

With string inverters you may even replace one string inverter with another brand with no impact on the project.

However , in large-scale solar power plants, there are disadvantages to string inverters: "You are going to hundreds of or thousands of inverters for a mutli-megawatt system leading to thousands of points of command and control, which can become very difficult and costly to manage unless those string inverters use E24 VCI™ (Virtual Central Inverter) technology.

E24 VCI™ allows to control hundreds of string inverters through PLC (Power Line Communication) making them operate as one inverters with a single command and control point while still having each inverter each inverter optimizing power production on each MPPT input.

Now you have a multi-megawatt inverter that is made up of many power modules, but the command and control is through one interface. You have instant control over all power modules of the virtual inverter, and you maintain the advantage of smaller string inverters but add to it by having a single command-and-control point.



Technical Specifications

Model	PVIS3-150KI	PVIS3-120KI
Input(DC)		
Max. DC voltage	1100V	
MPPT voltage range	200-1000Vdc	
Rated DC voltage	780V	620V
Number of MPPT	12	10
Strings per MPPT	2	
Max. input current per MPPT	26A	
DC switch	Yes	
Output(AC)		
Nominal AC output power	150KW@25 °C, 136kW@40 °C, 120KW@50 °C	120kW@25 °C, 110kW@40 °C, 100kW@50 °C
Max. AC output power	150kW	121kW
Nominal AC voltage	500Vac	230V/400Vac
AC voltage range	400~621V	320~480V
Rated AC grid frequency range	50/60 Hz(±5Hz)(adjustable)	
AC grid frequency range	45~55Hz / 55~ 65Hz	
Rated output current	157A	158.8A
Max. output current	174.5A	176.4A
Power factor (cos φ)	0.8 leading ~ 0.8 lagging	
THDi	<3%	
AC connection	3W+PE	3W+PE(default),3W+N+PE(configurable)
Topology	Transformerless	
Efficiency		
Max. efficiency	99%	98.7%
Euro efficiency	98.5%	98.3%
MPPT efficiency	99.9%	
Protection devices		
Anti-islanding protection	Yes	
DC anti reverse connection	Yes	
AC Short-circuit protection	Yes	
AC leakage current fault protection	Yes	
Grid monitor	Yes	
DC switch	Yes	
String fault Detection	Yes	
Insulation detection	Yes	
Physical		
Dimensions (W * H * D)mm	1055 x 700 x 336	
Weight(kg)	110	96
Operating temperature range	-25 °C ~ 60 °C	
Noise emission (typical)	≤60dB	≤70dB
Cooling type	Fan Cooling	
Protection rating	IP66	
Features		
Display	LED Indicator, Bluetooth+APP	
Interfaces	RS485 / WiFi,GPRS,PLC (Optional)	

Specifications subject to change without prior notice.

Model	PVIS3-200K	PVIS3-250K
Input(DC)		
Max. DC voltage	1500V	
MPPT voltage range	600-1500Vdc	
MPPT voltage range at full load	880-1300Vdc	
Nominal input voltage	1080V	
Start DC voltage	650V	
Number of strings input	24	
Number of MPPT	12	
Strings per MPPT	2	
Max. input current per MPPT	26A	
Max. short-circuit current per MPPT	35A	
Output(AC)		
Nominal AC output power	200kW @40℃, 175kW @50℃	250kW @40℃, 225kW @50℃
Max. AC apparent power	200kVA	250kVA
Max. AC output power	200kW	250kW
Nominal AC voltage	800Vac,640~920V	
AC connection	3W+PE	
AC grid frequency range	50/60 Hz(±5Hz)(adjustable)	
Rated output current	126.3A	162.4A
Max. output current	144.3A	176.6A
Power factor (cos φ)	0.8 leading ~ 0.8 lagging	
THDi	<3%	
Efficiency		
Max. efficiency	99%	
Euro efficiency	98.5%	
Protection devices		
DC switch	Yes	
Anti-islanding protection	Yes	
Output over current	Yes	
DC anti reverse connection	Yes	
String fault Detection	Yes	
DC surge protection	Yes	
AC surge protection	Yes	
Insulation detection	Yes	
PID recover	Yes	
LVRT	Yes	
Physical		
Dimensions (W * H * D)mm	1055 x 700x336	
Weight(kg)	110	
Operating temperature range	-25℃~ 60℃ (>50℃ derating)	
Noise emission (typical)	≤70dB	
Cooling type	Fan cooling	
Protection rating	IP66	
Humidity	0~100%	
Input terminal	Amphenol	
Topology	Transformerless	
Certification & Standard		
Standard	EN/IEC 62109-1/2;IEC61727;IEC62116;EN 50549;VDE-AR-N-4110	

Off-Grid



On-Grid



Bidirectional



E24 Modular Range Of Products For Building Easy, Flexible & Evolutive Solutions

E24 products dynamically evolve with the lifestyle and work style of its customers while easing the installation process.

E24 products are conceived in modules allowing for an easy upgrade to adjust with the needs of the customers. Being modular and easy to connect E24 products allow installers to easily configure the required modules for an optimal solution while offering easy upgrade options.



Ordering Information

Ref Number	Description
PVIS3-120KI	On Grid String inverter, 12 MPP, 24 inputs Max DC 1100, 120KW, 3w+N+PE or 3W+PE, 400Vac, 50/60Hz (PLC option)
PVIS3-150K	On Grid String inverter, 12 MPP, 24 inputs Max DC 1100, 150KW, 3W+PE, 500Vac, 50/60Hz (PLC option)
PVIS3-200K	On Grid String inverter, 12 MPP, 24 inputs Max DC 1500, 200KW, 3W+PE, 800Vac, 50/60Hz (PLC option)
PVIS3-250K	On Grid String inverter, 12 MPP, 24 inputs Max DC 1500, 250KW, 3W+PE, 800Vac, 50/60Hz (PLC option)

E24®

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ISO 9001:2015



QUALITY STANDARD

