SUNNY HIGHPOWER PEAK3

SMA UTILITY SOLUTIONS

Customized for tomorrow today.

Ready for **ennexOS**

Tailored to the unique needs of utilities with up to 150 kW from the pioneer of PV power plant systems

ENERGY THAT CHANGES

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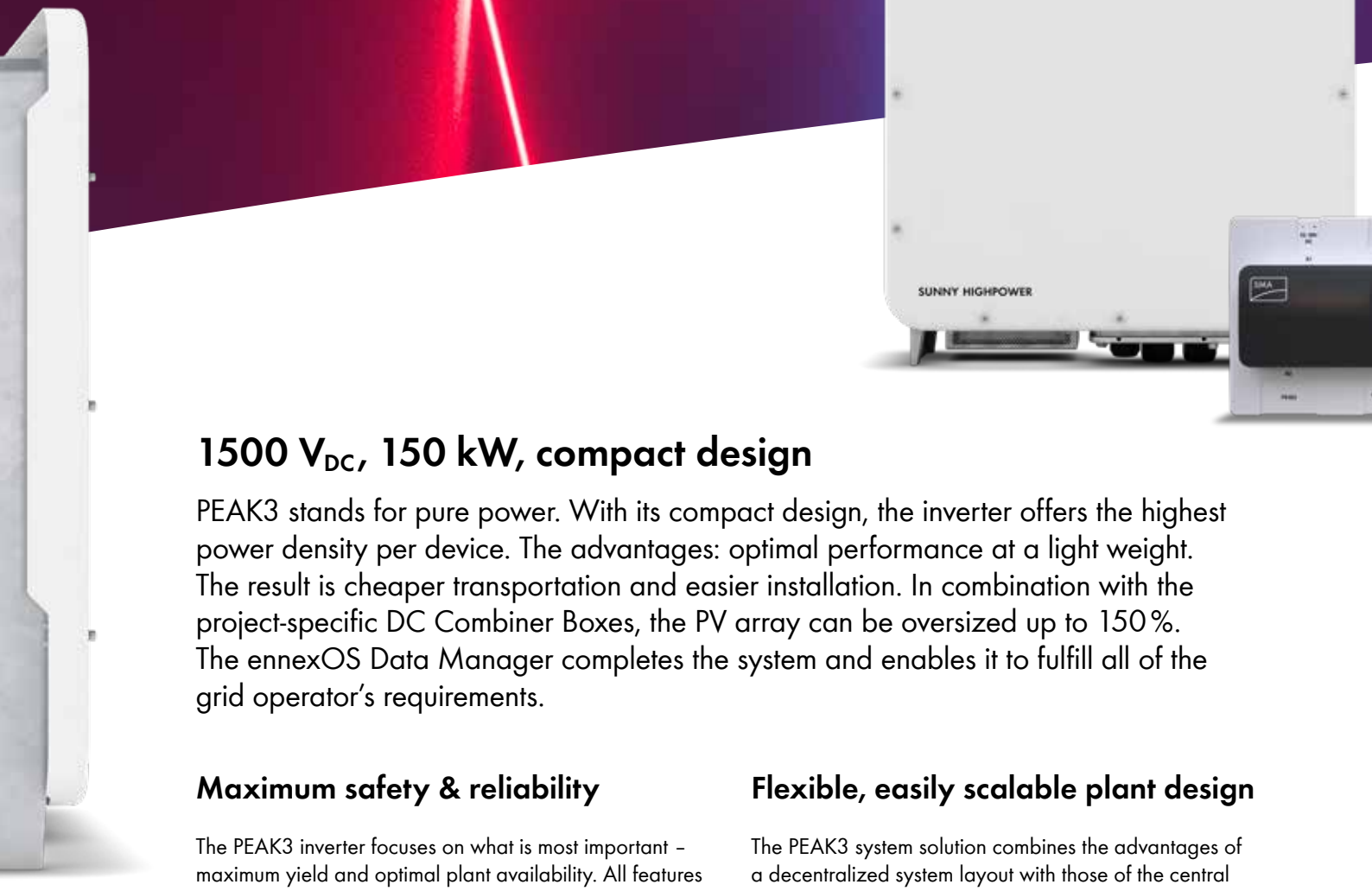
Get large-scale projects up and running easily.



1500 V_{DC}, 150 kW, compact design

PEAK3 stands for pure power. With its compact design, the inverter offers the highest power density per device. The advantages: optimal performance at a light weight. The result is cheaper transportation and easier installation. In combination with the project-specific DC Combiner Boxes, the PV array can be oversized up to 150 %. The ennexOS Data Manager completes the system and enables it to fulfill all of the grid operator's requirements.

Maximum safety & reliability

The PEAK3 inverter focuses on what is most important – maximum yield and optimal plant availability. All features and components are custom-tailored in order to keep the weight down, to minimize potential error sources and to maximize efficiency. Proven technologies such as the active cooling system SMA OptiCool ensure a long lifetime of the inverters.

Flexible, easily scalable plant design

The PEAK3 system solution combines the advantages of a decentralized system layout with those of the central inverter concept. The DC Combiner Boxes enable efficient planning and easy expansion of large-scale solar plants even on heterogeneous terrain. Thanks to the modular approach, projects can be scaled both in terms of power and function. This means maximum flexibility in the plant design.

Ready for the digital energy world of tomorrow

The PEAK3 system solution is ready for ennexOS, SMA's pioneering digital platform. ennexOS converges the data of all relevant energy sectors to realize modern, forward-looking products in the energy industry. The platform is gradually extended and currently offers powerful features such as satellite-based performance ratio monitoring. Further information: www.ennexos.com

PEAK3 Solution with Inverter,
DC Combiner Boxes and ennexOS Data Manager

PEAK3 – the first distributed solution, specially developed for PV power plants.

Fast installation, easy commissioning

The PEAK3 system solution offers smart functionalities for quick and safe installation of all devices. Ergonomic grips and the integrated hook-in mechanism simplify the mounting of the inverters. Large, stiff DC cables can be conveniently routed via a separable connection plate and allow hassle-free connection. A single ennexOS Data Manager enables up to 200 inverters to be commissioned centrally in just a few minutes.

Efficient control, convenient monitoring

Each device can be controlled directly via reliable, fast Ethernet communication between Data Manager and inverter. The entire plant portfolio can be centrally monitored with the new Sunny Portal powered by ennexOS. Changes to the configuration are easily made across plants without setting up multiple VPN connections. Additional monitoring systems can access all devices via the open Modbus/TCP interface.

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Modular system of high performance extensions.

The future-proof solution that grows with your requirements

More than 20 years of utility experience have gone into the development of the PEAK3 system solution. Central handling, decentralized system and a modular concept – that's exactly what makes PEAK3 so convincing. The powerful supplements help you get the most out of large PV plants.

PEAK3 extensions with Sunny Highpower Storage, SMA Engineering Services, Smart Connected for Utility Plants, Weather Station and Remote I/O

Tailored to your unique needs

PEAK3 – Exactly what is needed to meets the highest demands for maximum yield.

SUNNY HIGHPOWER STORAGE
- Designed for commercial and utility applications
- Suitable for high-voltage batteries up to 1500 V
- Scalable solution for storage and solar-plus-storage plants

SMART CONNECTED FOR UTILITY PLANTS
- Free and automatic inverter monitoring by SMA
- Proactive communication by e-mail in the event of faults
- Lower lifecycle service costs – no on-site diagnosis needed

SMA ENGINEERING SERVICES
- Comprehensive consulting by technical experts from early project stages
- Static generator evaluation including load flow and short-circuit analysis
- Optimization of plant behavior in systems with extended Data Manager

ADDITIONAL PRODUCTS
- **Weather Station:** Professional measuring equipment for synchronous logging of temperature, relative humidity and irradiance
- **Remote I/O:** The preconfigured I/O systems are perfectly coordinated with ennexOS and can be easily integrated into a system

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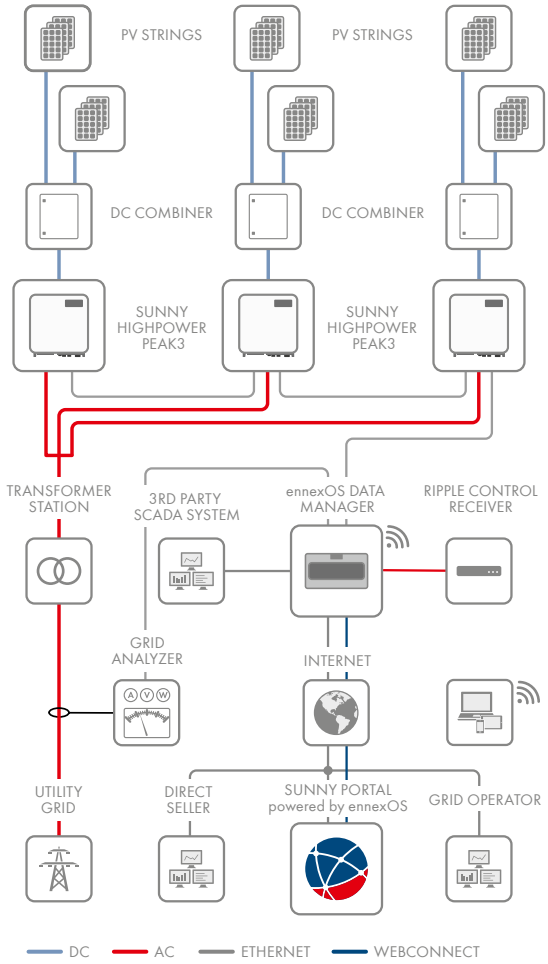
Customized for tomorrow today.

Decentralized solution with up to 150 kW for large-scale PV power plants
Thanks to an intelligent system structure, all inverters and the ennexOS Data Manager are installed centrally. The DC Combiner Boxes are distributed in the field. The result: maximum performance, improved installation and maintenance, cost-optimized cabling.

System diagram



Ready for **ennexOS**

SUNNY HIGHPOWER PEAK3 – Technical Data

	SUNNY HIGHPOWER PEAK3
Input (DC)	
Max. PV array power	225000 Wp
Max. input voltage	1500 V
MPP voltage range / rated input voltage	855 V to 1425 V / 855 V
Max. input current / max. short-circuit current	180 A / 325 A
Number of independent MPP trackers	1
Number of inputs	1 or 2 (optional) for external PV array junction boxes
Output (AC)	
Rated power at nominal voltage	150000 W
Max. apparent AC power	150000 VA
Nominal AC voltage / AC voltage range	600 V / 480 V to 690 V
AC grid frequency / range	50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 65 Hz
Rated grid frequency	50 Hz
Max. output current	151 A
Power factor at rated power / displacement power factor adjustable	1 / 0 overexcited to 0 underexcited
Harmonic (THD)	< 3 %
Feed-in phases / AC connection	3 / 3-PE
Efficiency	
Max. efficiency / European efficiency	98.7 % / 98.5 %
Protective devices	
Ground fault monitoring / grid monitoring / DC reverse polarity protection	● / ● / ●
AC short-circuit current capability / galvanically isolated	● / –
All-pole-sensitive residual-current monitoring unit	●
Monitored surge arrester (type II) AC / DC	● / ●
Protection class (according to IEC 62109-1) / overvoltage category (according to IEC 62109-1)	I / AC: III; DC: II
General data	
Dimensions (W / H / D)	770 mm / 830 mm / 444 mm (30.3 in / 32.7 in / 17.5 in)
Weight	85 kg (185 lb)
Operating temperature range	–25 °C to +60 °C (–13 °F to +140 °F)
Noise emission, typical	< 65 dB(A)
Self-consumption (at night)	< 5 W
Topology	transformerless
Cooling method	OptiCool, active cooling, speed-controlled fan
Degree of protection (according to IEC 60529)	IP65
Max. permissible value for relative humidity (non-condensing)	100 %
Features / functions / accessories	
DC connection / AC connection	Terminal lug (up to 300 mm²) / Screw terminal (up to 150 mm²)
LED display (Status / Fault / Communication)	●
Ethernet interface	● (2 ports)
Data interface: SMA Modbus / SunSpec Modbus / Speedwire, Webconnect	● / ● / ●
Mounting type	Rack mounting
OptiTrac Global Peak / Integrated Plant Control / Q on Demand 24 / 7	● / ● / ●
Off-grid capable / SMA Fuel Save Controller compatible	● / ●
Warranty: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○
Certificates and approvals (planned)	IEC 62109-1/-2, AR N-4110, AR N-4120, CEI 0-16, C10 / 11:2012, EN 50549, PEA 2017, DEWA
Type designation	SHP 150-20

● Standard features ○ Optional – Not available Data at nominal conditions | Status: June 2018

Central handling and a modular solution from the pioneer of PV power plant systems.

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