



## Reliable

- High-performance and robust components to certified industry quality

## Future-proof

- Flexible integration of storage systems, other power generation or compensation systems
- Access to the energy markets of the future „powered by ennexOS“

## Functional

- Highly dynamic farm control to ensure compliance with international grid integration requirements
- Central information interface for the entire power plant

## Securely connected

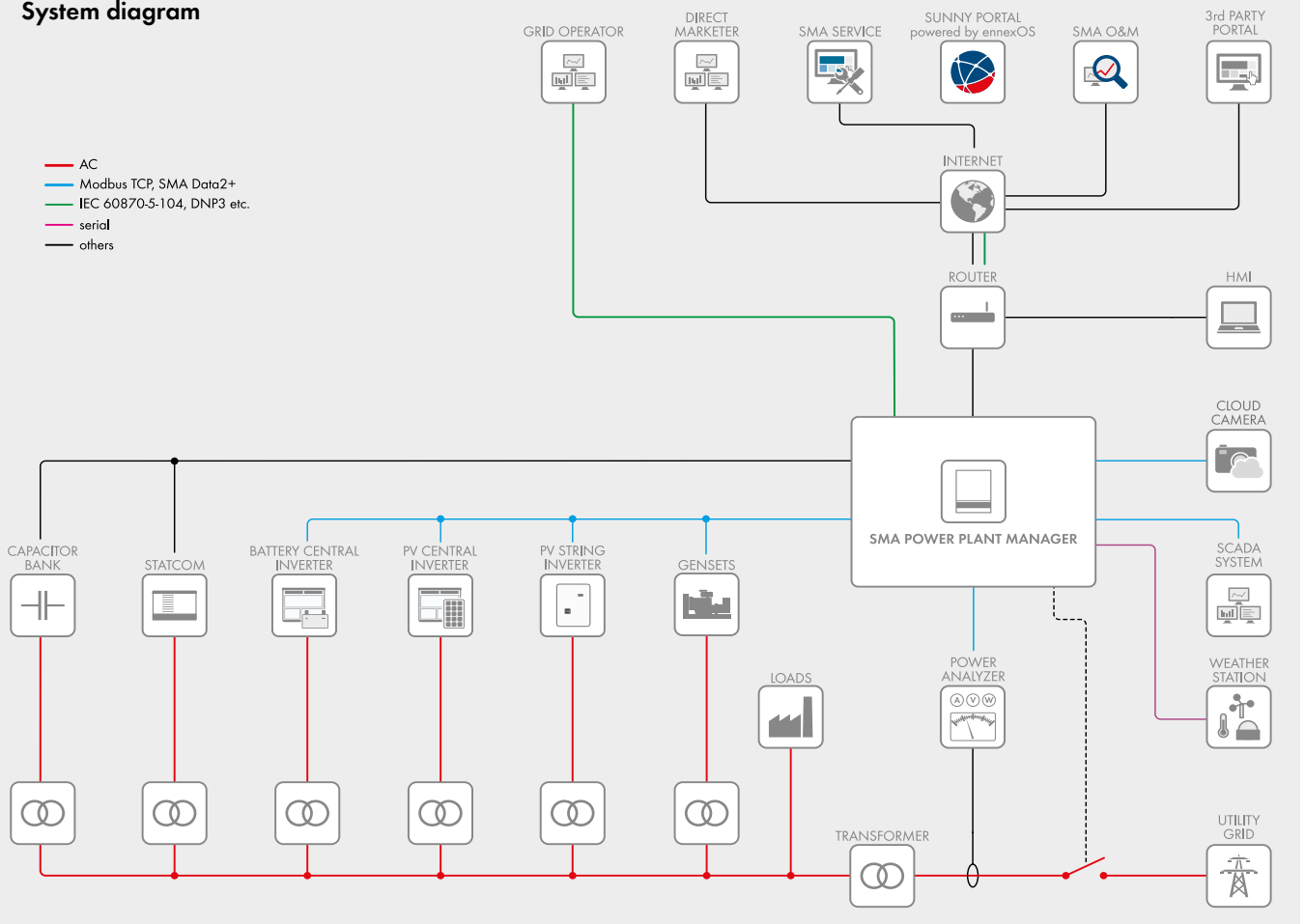
- Remote control, monitoring, diagnosis and parameterization via secure connections
- Telecontrol protocols IEC 61850, IEC 60870-5-101 / -104, DNP3

## SMA POWER PLANT MANAGER

Reliable power plant operation in intelligent utility grids

The Power Plant Manager is the integrated solution for reliable monitoring, control and grid-compatible power control for all megawatt-range PV power plants with central or string inverters. Based on the new ennexOS software platform, its flexible, expandable design also makes it ideal for the requirements of hybrid energy generation and for intelligent connectivity. For PV system operators, grid operators, marketers and service technicians, the Power Plant Manager is the central data exchange interface with the plant. Highly dynamic, demand-oriented farm control not only ensures that the power plant runs efficiently but also helps stabilize the utility grid. The Power Plant Manager allows flexible operation in PV systems with or without storage systems installed in on- and off-grid systems.

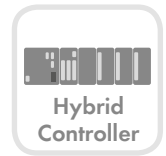
## System diagram



Technical Data (preliminary)	SMA POWER PLANT MANAGER
<b>Communication</b>	
Number of supported devices	Max. 200 devices
I/O systems and power analyzers	Max. 10 devices, Ethernet, Modbus TCP
Telecontrol protocols (optional)	IEC 61850-7-4, IEC 60870-5-101 / -104, DNP3
<b>Connections</b>	
Serial interface	RS485
Voltage supply	3-pole connection, terminal block
Network (LAN)	Ethernet, 10/100/1000 Mbit/s, optical fiber (optional)
USB	1 x USB 3.0, 2 x USB 2.0 (type A)
Digital inputs/outputs	2 x DI, 4 x DO
<b>Voltage supply</b>	
Supply voltage	100 VAC to 240 VAC / 18 VDC to 32 VDC / 30 VDC to 60 VDC
Internal electricity supply	with monitoring, maintenance-free buffer module
<b>Ambient conditions during operation</b>	
Ambient temperature	-25 °C to +45 °C
Permissible range for relative humidity (non-condensing)	5% to 95%
Maximum operating altitude above MSL	0 m to 2,000 m
Degree of protection according to IEC 60529	IP 54 / NEMA 3
<b>General Data</b>	
Dimensions without base (W/H/D)	800 mm / 1000 mm / 300 mm
Weight (depending on the order)	Approx. 75 kg
Mounting type	Wall mounting
Material type	Sheet steel, powder coated on the outside
<b>Features</b>	
CPU	Powerful processor with four execution cores
Data storage	Solid-state disk (SSD), 128 GB
Warranty	5 years
Certificates and permits (more available upon request)	<a href="http://www.SMA-Solar.com">www.SMA-Solar.com</a>
<b>Equipment options</b>	
Advanced control and regulation functions	SMA Hybrid Controller (see next page)
Protocol converter	WAGO controller PFC200
I/O systems	Moxa ioLogik E1242 (4 AI, 4 DI, 4 DIO) Moxa ioLogik E1260 (6 RTD) WAGO I/O SYSTEM 750 (8 DI, 8 DO, 4 AI, 4 AO, 2 RTD)
Type designation	PPM-10

## SMA HYBRID CONTROLLER equipment option

The SMA Hybrid Controller can be optimally integrated into the Power Plant Manager. It intelligently controls energy flows for large-scale PV power plants and enables seamless integration of renewable energies into utility grids. With the new diesel-off function, it operates microgrids based entirely on renewable energies and keeps the utility grid stable even if strong fluctuations occur.



Technical Data	SMA Hybrid Controller (optional)
<b>General system design</b>	
System size (PV system size)	Unlimited
Maximum number of devices <sup>1)</sup> total	max. 120 <sup>7)</sup>
PV inverter	max. 120
Generator	max. 16
Battery inverter	max. 32
External measurement (DAQ / Janitza / more upon request)	max. 8
Irradiation sensors	max. 2
Supported communication protocols <sup>6)</sup>	IEC 60870-5-104; IEC 60870-5-101; IEC 60870-5-103; IEC 61850; IEEE1815 (DNP3)
Communication protocol to genset controllers	Modbus / TCP Master via Ethernet 100BASE-FX and TX or CAN / CANOpen <sup>2)</sup>
Communication devices	optional router supports a remote access and VPN
<b>Other interfaces</b>	
Multi-functional digital inputs for potential-free contacts	10
<b>Power measurement</b>	
Integrated current measurements: 1 A <sup>3)</sup> at the sensor input <sup>4)</sup>	6
Integrated voltage measurement: 480 V voltage input	3
Compatible external power measurement	SMA FSC-11-DAQ, UMG 604 JANITZA <sup>5)</sup> , ION PowerLogic 7650/7750/8600/8800/9000 <sup>5)</sup>
<b>Data recording</b>	
Data / event recording	10-second values for 30 days (can be changed / depending on the event)
<b>Compatible inverters</b>	
Inverters	Sunny Tripower (STP TL-30, STP US-10, STP 60-10, STP50-40), Sunny Tripower Storage <sup>6)</sup> Sunny Highpower Peak1, Sunny Highpower Peak3, Sunny Central CP-XT, Sunny Central, Sunny Central Storage, Sunny Central UP, Sunny Central Storage UP
<sup>1)</sup> Different distribution via customer-specific software is an option <sup>2)</sup> Protocol implementation upon request <sup>3)</sup> 5A sensor available upon request <sup>4)</sup> Up to 100 m cable length <sup>5)</sup> Not included in the scope of delivery of SMA <sup>6)</sup> Upon request <sup>7)</sup> The maximum number of devices depends on the project-specific requirements for control functions and expected cycle times.	

