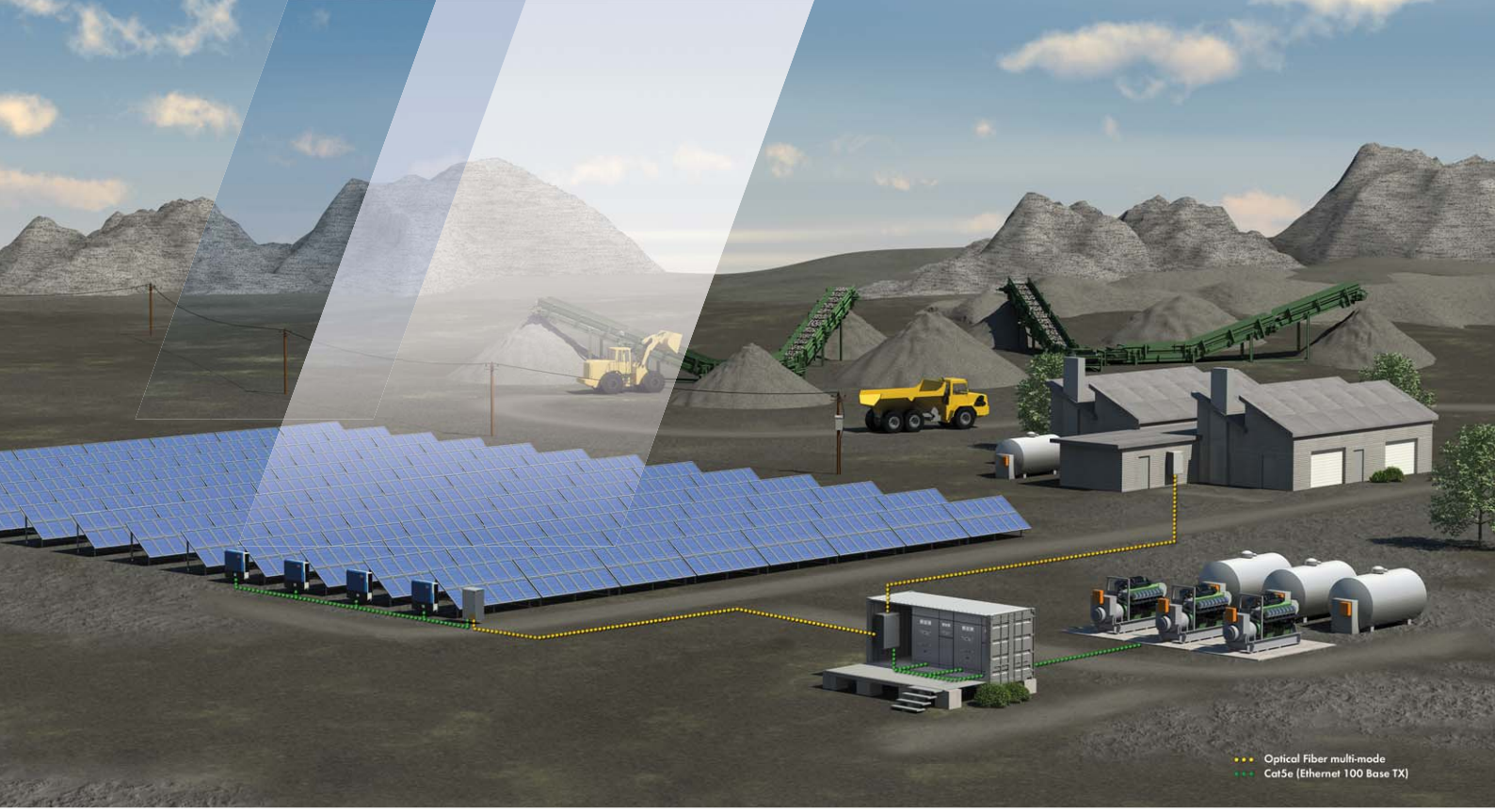
SMA ENERGY SYSTEMS

SMA plant management solution for maximum energy efficiency

Optimal control of hybrid energy systems



SMA plant control

Optimum performance with the SMA Hybrid Controller M

The SMA Hybrid Controller Medium intelligently controls energy flows and enables seamless integration of renewable energies into power grids. The device automatically regulates all generators and storage systems according to the required load profile. Thanks to its intuitive user interface, the SMA Hybrid Controller offers clearly structured configuration wizards and full transparency on energy flows.

Benefit from clean solar power:

- Integrating photovoltaics into fossil-fueled power generation systems
- Microgrid frequency and voltage control
- High-precision frequency & voltage measurement
- Improve fuel saving with cloud camera support

Cost-effective

- Increases yields
- Easy installation
- Fast commissioning
- Remote monitoring and system setting via SCADA

Scalable

- The right configuration for every system size
- M-Version for integration into existing cabinet on site
- Large and X-Large available as option of SMA Power Plant Manager
- A wealth of functions for various degrees of penetration

Flexible

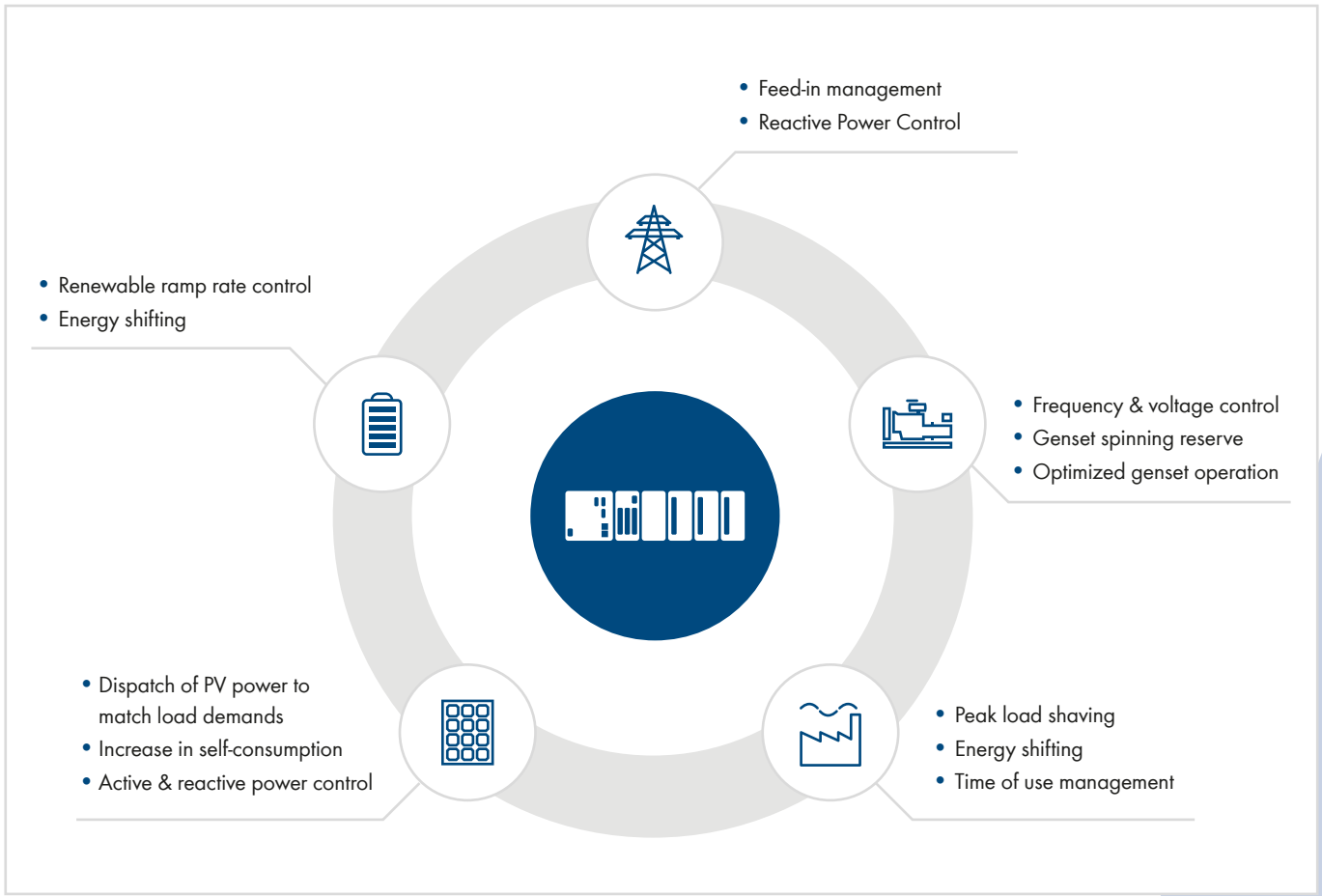
- Modular design for flexible customization and system expansion
- Storage systems can be integrated
- Interface to various genset controls

Robust

- Industrial grade hardware
- Wide operating temperature range
- Fully tested

More flexibility for new opportunities

We offer various customized configuration and system expansion possibilities. SMA Hybrid Controller manages genset, storage and photovoltaic system to achieve the needed functions for maximum energy efficiency.



TECHNICAL DATA	SMA Hybrid Controller Medium
General System Design	
System size (PV system size)	up to 2000 kW
Maximum number of devices[1] total PV inverters Gensets Battery inverter External measurement (DAQ / Janitza / more upon request) Irradiation sensors Cloud camera	max. 120[8] max. 120 max. 16 max. 32 max. 10 max. 2 upon request
General Data	
Dimensions PLC without minimum distances around it (W x H x D) in mm (approx.)	385 x 119 x 64
Dimensions Routing switch (W x H x D) in mm (approx.)	52 x 100 x 101
Weight PLC + Routing switch (approx.)	2.2 kg + 0.7 kg
Ambient Conditions	
Operating temperature range	–30 °C bis +55 °C
Maximum operating altitude	2000 m above mean sea level[2]
Humidity	5% to 95% (non-condensing)
Power supply	
Voltage supply (nominal value)	24 V_{DC}
Current consumption (PLC only)	typ. 1400 mA at 24 V_{DC}
Communication	
System communication for system monitoring, SCADA and remote monitoring	Modbus / TCP, HTTP, FTP over Ethernet 10 BASE-T and 100 BASE-T(X)
Internal network communication	Ethernet 100BASE-FX[9] and TX
Supported telecontrol protocols	IEC 60870-5-104; IEC 60870-5-101[7]; IEC 60870-5-103[7]; IEC 61850[7]; IEEE1815 (DNP3)[7]
Communication to inverters / maximum cable length	Ethernet 100BASE-TX /100 m or 100BASE-FX[9] /2 km
Communication protocol to genset controllers	Modbus / TCP Master via Ethernet 100BASE-FX[9] and TX or CAN / CANOpen[3]
Optional communication device	Routing switch, supporting a remote access and VPN
Other Interfaces	
Multi-functional digital inputs for potential-free contacts	10
Power measurement Integrated current measurements: 1 A[4] at the sensor input[5] Integrated voltage measurement: 480 V voltage input	 4 2
Compatible external power measurement	SMA FSC-11-DAQ, Janitza UMG 604, [6] Schneider Electric PowerLogic ION 7650/7750/8600/8800/9000
Visualization & data recording	
Visualization and configuration interface	Web interface for local and remote monitoring
Data / event recording	10 second values for 30 days (changeable) / by events
Compatible inverters	
Inverters	Sunny Tripower (STP TL-30, STP US-10, STP 60-10, STP50-40), Sunny Tripower Storage[7], Sunny Highpower Peak3
[1] Different distribution via customer-specific software is an option [2] Individual altitude upon request [3] Protocol implementation upon request [4] 5A sensor available upon request [5] Up to 100 m cable length [6] Not included in the scope of delivery of SMA [7] Upon request [8] The maximum number of devices depends on the project-specific requirements for control functions and expected cycle times. [9] With optional routing switch only	
Type designation	HYBRID-CONTROLLER