

# ES compact

Single-phase • 3 kW • 4.5 kW • 6 kW

The compact solution for energy independence



- Flexible storage system through a wide range of battery types (lithium or lead) and manufacturers
- Cost-optimized hybrid inverter
- Integrated data logger with free portal
- Coloured graphic display
- Emergency power capability
- 5 year warranty (optional 10 year warranty)
- Service hotline

# ES compact

## Technical specifications

		3000 ES	4500 ES	6000 ES**
<b>DC Inputs</b>	Maximum input power	3.1 kW	4.7 kW	6.3 kW
	Maximum input voltage	600 V		
	Minimum input voltage	115 V		
	Nominal input voltage	400 V		
	FV MPPT voltage range	100 V - 550 V		
	DC voltage range - independent MPPTs	100 V - 550 V @ 2 kW	100 V - 550 V @ 3 kW	100 V - 550 V @ 4 kW
	DC voltage range - MPPT connected in parallel	100 V - 550 V @ 3.1 kW	100 V - 550 V @ 4.7 kW	100 V - 550 V @ 6.3 kW
	Maximum power x MPPT	2 kW	3 kW	4 kW
	Maximum MPPT power - Maximum imbalance	2kW@MPPT1+1.1kW@MPPT2	3kW@MPPT1+1.7kW@MPPT2	4kW@MPPT1+2.3kW@MPPT2
	Maximum input current x MPPT	10 A	15 A	20 A
	Short-circuit current x MPPT	15 A	20 A	26 A
	Number of MPPTs	2		
	Maximum number of strings x MPPT	1 + 1		
	Mains frequency	50 Hz		
<b>Battery charge</b>	Battery type	Lead-acid / Lithium		
	Battery voltage range	40 V - 65 V		
	Battery current range	35 A (programmable)		
	Maximum charging / discharging power	2.3 kW		
	Discharge strategy	3 stage, adaptive with maintenance		
	Temperature compensation	As standard		
<b>AC inputs</b>	Mains connection	Single-phase		
	AC voltage range	230 Vac ± 15 % (*)		
	Mains frequency	50 Hz		
	Maximum input current	32 A		
<b>AC output</b>	Mains connection	Single-phase		
	Sn nominal power	3 kVA	4.5 kVA	6 kVA**
	P maximum active power	3 kW	4.5 kW	6 kW**
	Q maximum reactive power	3 kVA	4.5 kVA	6 kVA**
	AC voltage range	230 Vac ± 15 % (*)		
	Output nominal current	13 A	19.6 A	26.1 A
	Contribution to the short-circuit current	32 A		
	Mains nominal frequency	50 Hz		
	Frequency range	47 Hz - 53 Hz (*)		
	Cos φ	1 (adj ± 0.80)		
	Maximum smax power in BACKUP	2.2 kVA		
	Intervention time	< 5 % sec (*)		
	THD	< 3 %		
<b>Operating Performance</b>	Maximum efficiency	97 %		
	European efficiency	96 %		
	Battery typical efficiency	94 %		
<b>Protective Devices</b>	DC polarity reversal	As standard		
	BATTERY polarity reversal	As standard		
	BATTERY overload protection	As standard		
	Safety interlock	Built-in		
	AC short-circuit protection	As standard		
	Isolation monitoring unit	As standard		
	Interface protection and anti-islanding	In compliance with local legislation		
	RCMU (Residual Current Monitoring Unit)	As standard		
	BATTERY galvanic isolation	As standard		
	DC Overvoltage protective device (MOV+ SURGE PROTECTOR)	As standard		
	AC Overvoltage protective device (MOV+ SURGE PROTECTOR)	As standard		
	BATTERY overvoltage protection (MOV)	As standard		

(\*) The range depends on the grid connection standard valid in the country of installation.

(\*\*) Maximum grid feed-in power in Germany limited to 4.5 kVA.



The quality management system of the SolarMax Produktions GmbH is certified according to ISO 9001:2015.

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## Technical specifications

		3000 ES	4500 ES	6000 ES
<b>Accessories Supplied</b>	DC connector	Quick coupling		
	AC connector	Screw terminal strip, M25 cable gland		
	BATTERY connection	Screw terminal strip, M25 cable gland		
	DC disconnect	AS standard		
	BATTERY automatic isolator	Built-in		
	AC inputs magnetic thermal circuit breaker	AS standard		
	AC output magnetic thermal circuit breaker	AS standard		
	AC-BY-PASS switch	AS standard		
	Display	Graphic Touch Screen 4.3" colour LCD		
	Interface	USB, CAN Bus, Ethernet, RS485 (optional), WLAN (optional via USB-Stick)		
	External alarm signal	AS standard		
	Data logger	Built-in		
Warranties	5 years (as standard), 10 years (optional)			
<b>Ambient Conditions</b>	Ambient temperature	- 20 °C ... + 60 °C		
	Power derating temperature range	+ 40 °C ... + 60 °C		
	Storage temperature	- 30 °C ... + 70 °C		
	Relative humidity	5 % ... 95 % without condensation		
	Noise levels	< 50 dB(A) @ 1 m		
	Maximum operating altitude without derating	2,000 m		
<b>Physical</b>	Protection rating	IP21		
	Overvoltage category (IEC 62109-1)	II (DC inputs, BATTERY, GENERATOR)		
	Ventilation	I-cool		
	Dimensions (W x H x D)	476 mm x 730 mm x 160 mm		
	Weight	21 kg		
	Fitting system	Wall bracket		
<b>Safety</b>	Protection class	I		
	DC to AC isolation level	Without transformer		
	BATTERY to AC and DC isolation level	With safety transformer		
	Certifications	CE		
	EMC and Safety standards	EN 62109-1; EN 62109-2; EN 61000-6-3; EN 61000-3-2; EN 61000-3-3; EN 61000-3-11;		
	Mains connection standards	EN 61000-3-12; VDE 0-126-1-1; VDE AR-N 4105		

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 Data, dimensions, design, weight and dimensions are subject to change.



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## Storage systems and inverters for photovoltaic systems

- Storage systems
- Inverters
- Energy management
- Data communication
- System monitoring
- RePowering
- Services



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