15 Technical data

15.1 sonnenBatterie 10

System data (AC)	sonnenBatterie 10					
General	Nominal voltage	230/240 V				
	Nominal frequency	50 Hz				
	Nominal power[10]	4,600/4,800 W				
	Nominal current	20 A				
	Power factor range	0.9 capacitive ... 0.9 inductive				
	Network Impedance (Z_{max})	0.34 Ω				
	Flicker P_{st} (Z_{ref})	0.221 Ω				
	Flicker P_{lt} (Z_{ref})	0.219 Ω				
	Current (Max. continous)	20 A				
	Max. output fault current	120 mA				
	Inrush current	0 A				
	Mains connection	single-phase, L / N / PE				
	Max. ext. overcurrent protection	25 A, 1ph				
	Mains topology	TN / TT				
	Mains connection fuse	Miniature circuit breaker | Type B | 20 - 25 A				
Depends on capacity[11]	sonnenBatterie	10/5,5	10/11	10/16,5	10/22	10/27,5
	Nominal capacity	5.5 kWh	11 kWh	16.5 kWh	22 kWh	27.5 kWh
	Usable capacity	5 kWh	10 kWh	15 kWh	20 kWh	25 kWh
	Charging/discharging power[12]	3.4 kW	4.6/4.8 kW	4.6/4.8 kW	4.6/4.8 kW	4.6/4.8 kW
	Charging/discharging current	14.8/14.2 A	20 A	20 A	20 A	20 A
Battery data (DC)	Cell technology	lithium iron phosphate (LiFePO4)				
	Nominal voltage	102.4 V				
	Working voltage	204.8 V				
	Current (Max. continous)	40 A				
	Short-circuit current	50 A				
	Min. number of battery modules	2				
	Max. number of battery modules	10				
Safety	Protection class	I / PE conductor				
	Required fault current monitoring	In TT networks: Residual current device (RCD) with a rated differential current of 300 mA; requirements on site must be observed.				
	Degree of Protection	IP30				
	Overvoltage category	2				

[10] at cos phi = 1

[11] from 16.5 kWh: storage system with extension

[12] at cos phi = 1

	Rated short-withstand current	10 kA				
	Separation principle	no galvanic isolation, transformer-less				
	Fulfilled standards and directives	AS/NZS 4777.2; CEI 0-21; EMC Directive 2014/30/EU; EN 50438; G98/99; IEC 61000-6-1; IEC 61000-6-3; IEC 62040-1; IEC 62109-1; IEC 62619; Low Voltage Directive 2014/35/EU; UN 38.3; VDE-AR-N 2510-2; VDE-AR-N 2510-50; VDE-AR-N 4105				
Power measurement	Voltage measurement inputs	Nominal voltage (AC): 230 V (L-N), 400 V (L-L) | max. connectible conductor cross-section: 1.5 mm^2				
	Clamp-on current transformer	Max. measurable current: 60 A (standard), optional up to 400 A				
Dimensions/weight[13]	sonnenBatterie	10/5,5	10/11	10/16,5	10/22	10/27,5
	Dimensions (H/W/D) in cm	172-184/69/27		2 x 172-184/69/27		
	Height without feet in cm	161				
	Total weight in kg	115	172	268	325	382
Ambient conditions	Environment	Indoor (conditional)				
	Operating temperature range[14]	-5 °C ... 45 °C				
	Storage temperature range	0 °C ... 40 °C				
	Transport temperature range	-15 °C ... 50 °C				
	Max. rel. humidity	85%, non-condensing				
	Permissible installation altitude	2,000 m above sea level				
	Pollution degree	2				

Additional ambient conditions

- No direct sunlight.
- No danger due to flooding.
- No corrosive and explosive gases. The maximum permissible ammonia content is 20 ppm.
- No dust, especially flour dust or sawdust.
- No vibrations.
- Installation room should be ventilated.
- Free space available.
- Floor is suitable for heavy loads.
- Observe all fire control standards.
- Observe applicable local building codes.

[13] From 16.5 kWh: storage system with extension

[14] Optimal: 5 °C ... 30 °C | Derating possible below 5 °C / above 30 °C.

15.2 sonnenProtect 4000 (optional)

		sonnenProtect 4000
System data (AC)	Nominal power	4,000 W
	Nominal frequency	50 Hz
	Output voltage	230/240 V
	Overload (30 min.)	max. 4,600 W
	Power factor range	0 capacitive ... 0 inductive
	Max. output current (duration/100 ms)	20 A / 23 A
	Short-circuit current	40 A
	Network configuration in emergency operation	TN
	Mains connection	single-phase, L / N / PE
	Mains connection fuse	Miniature circuit breaker | Type B | 20 A
	Operating concept	Single-phase power supply via emergency circuit(s). The switch to emergency operation takes place automatically through the storage system.
	Switchover time	approx. 15 seconds
	Threshold power	none (starting from 0 W)
Dimensions/weight	Dimension (H/W/D) in cm	52/23/12
	Weight in kg	approx. 10
Safety/protective devices	Protection class	II
	Degree of Protection	IP65
	Overvoltage category	2
	Required fault current monitoring	Residual current device (RCD) with a rated differential current of 300 mA; requirements on site must be observed.
Ambient conditions	Environment	Indoor/Outdoor
	Pollution degree	3
	Operating temperature range	-5 °C ... 50 °C
	Max. rel. humidity	100%, condensing
	Permissible installation altitude	2,000 m above sea level
	Additional ambient conditions	The ambient conditions prescribed for the storage system apply.