



Technical data

sonnenBatterie 12

Battery Stack

	sB12_1	sB12_2	sB12_3
Cell technology	Lithium iron phosphate (LFP)		
Number of battery modules	1	2	3
Nominal voltage (V)	96	192	288
Nominal capacity (kWh)	9.6	19.2	28.8
Usable capacity (kWh)	9.4	18.8	28.2
Maximum charge/discharge current (A)	60	60	60

Protection

Overvoltage category (OVC)	II (DC)
Decisive voltage classification (DVC)	C
Protection class	I

General Data

	sB12_1	sB12_2	sB12_3
Product dimensions (H/W/D) (cm)	88 / 56 / 29	139 / 56 / 29	190 / 56 / 29
Ambient temperature range (°C)		-20... 55	
Degree of protection		IP65	
Relative humidity (%)		0 ... 95 (non-condensing)	
Thermal management		Natural convection	
Weight per battery module (kg)		~ 87	
Maximum operation altitude (m)		3,000	
Installation method		Floor-standing with wall support	
Noise Emission (dB(A))		< 15	

Connection Box

Communication	Meter: Modbus TCP (LAN), Modbus RTU (RS485) Home network: Ethernet/Wi-Fi (optional)
Display	LED, sonnen App
DC connection	DC+, DC- & communication cables with connectors in scope of delivery

Energy Management

Battery Care	Automatic cell balancing, full charge, trickle charge
Feed-in limitation	Integrated via charging prognosis
External EMS	API integration possible

Compliance

Markings	CE, RCM, WEEE
Regulatory	EMC 2014/30/EU, LVD 2014/35/EU, RoHS 2011/65/EU, REACH 1907/2006/EC, WEEE 2012/19/EU, BATR 2023/1542/EU
Standards	EN IEC 62477-1, IEC 62040-1, IEC 62619, IEC 60730-1, EN IEC 61000-6-1, EN IEC 61000-6-3, AS 62040.1, AS 62477.1, SA TS 5398, UN 38.3, UN 3480
Origin	Designed and engineered in Germany
Country of manufacture	China
Guarantee	10 years or 10,000 cycles or 8,500 kWh throughput per kWh

sonnenInverter 6-1-2 Hybrid - Single Phase

AC output power can be selected during commissioning to the defined power levels listed below

DC Input (PV)	sl 6-1-2 3.0 kW	sl 6-1-2 3.6 kW	sl 6-1-2 4.6 kW	sl 6-1-2 5.0 kW	sl 6-1-2 6.0 kW
Maximum recommended PV power (Wp)			12,000		
Maximum input voltage (V)			550		
Start-up voltage (V)			90		
MPP voltage range (V)			70 ... 540		
Number of MPPT / input per MPPT			2/1		
Maximum MPP current per input (A)			16		
Maximum short-circuit current per MPPT (A)			20		

DC Output (Battery)

Battery voltage range (V)	80 ... 480
Maximum charge/discharge current (A)	45

AC Output (Grid)

Nominal active power (W)	3,000	3,600	4,600	5,000	6,000
Rated apparent power (VA)	3,000	3,600	4,600	5,000	6,000
Rated current (A)	13	15.7	20	21.7	26.1
Maximum current (A)	15	18	21	25	28.7
Grid connection	1Ph+N+PE 230 V 50 Hz				
Power factor	> 0.99 @ rated power (adjustable 0.8 LD ... 0.8 LG)				
Total harmonic distortion (THD) of current	< 3% @ rated power				

AC Output (Backup)

Maximum active power (W)	6,000
Peak apparent power (1 min) (VA)	7,200
Peak apparent power (15 s) (VA)	8,700
Anti-islanding method	Active Frequency Drift (AFD)
Grid connection	1Ph+N+PE 230 V 50 Hz
Power Factor	> 0.99 @ rated power (0.8 LD ... 0.8 LG)
Total harmonic distortion (THD) of voltage	< 5 % @ 100 % R Load
Switch-over Time (ms)	< 50
Backup Buffer	Full control via sonnen App
Black start	From battery and PV
AC island operation	Integrated

Efficiency	sl 6-1-2 3.0 kW	sl 6-1-2 3.6 kW	sl 6-1-2 4.6 kW	sl 6-1-2 5.0 kW	sl 6-1-2 6.0 kW
Maximum efficiency (PV2AC) (%)			97.8		
European efficiency (PV2AC) (%)			97.0		

Protection

Protection class	I
DC Switch	Yes
Anti-islanding protection	Yes
AC overcurrent protection	Yes
Overvoltage category (OVC)	II (DC), III (AC)
AC short circuit protection	Yes
DC reverse protection	Yes
Surge arrester	DC Type III, AC Type III
Insulation resistance detection	Yes
Leakage current protection	Yes
AFCI 2.0	Yes

General Data

Product dimensions (H/W/D) incl. wallframe (cm)	49.7 / 47.0 / 19.5
Weight (kg)	~ 16.5
Operating temperature range (°C) ¹	-25 ... 60
Noise Emission (dB(A))	< 35 dB (A)
Degree of protection	IP66
Relative humidity range (%)	0 ... 100 (non-condensing)
Thermal management	Natural convection
Maximum operation altitude (m)	3,000 (> 2,000 with derating)
Installation method	Wall-mounted
PV connection	MC4 Connector

Compliance

Markings	CE, RCM, WEEE
Regulatory	EMC 2014/30/EU, LVD 2014/35/EU, RoHS 2011/65/EU, REACH 1907/2006/EC, WEEE 2012/19/EU
Standards	EN IEC 62109-1, EN IEC 62109-2, EN IEC 61000-3-2, EN IEC 61000-3-3, EN IEC 61000-3-11, EN IEC 61000-3-12, EN IEC 61000-6-1, EN IEC 61000-6-2, EN IEC 61000-6-3, EN IEC 61000-6-4, EN IEC 62920, IEC 62477-1 (Annex P), AS/NZS 4777.2, CEI 0-21
Origin	Designed and engineered in Germany
Country of manufacture	Manufactured in China
Guarantee	10 years

¹ Charge/discharge current might be reduced due to inverter current limits. ² Derating based on temperature possible. Optimal temperature range is 15 ... 30 °C.

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