

Preliminary technical data Symo GEN24 SC 12.0 Plus

		Unit	Symo GEN24 SC 12.0 Plus		
Input data	Number of MPP trackers		2		
	DC input voltage range (Udc min - Udc max)	V	80 - 1000		
	Nominal input voltage (Udc,r)	V	610		
	Feed-in start-up input voltage (Udc start)	V	80		
	Usable MPP voltage range	V	80 - 800		
	MPP voltage range (at rated power) (U _{mppmin} - U _{mpp max})	V	295 - 800		
			MPPT1	MPPT2	
	Max. usable input current (Idc max)	A	28	14	
	Max. array short-circuit current (I _{sc pv} ¹⁾)	A	40	20	
	Number of DC connections		2	1	
			MPPT1	MPPT2	Total
	Max. usable DC power	W	12 360	8 600	12 360
	Max. PV generator output	Wpeak	14 000	9 000	18 000

1) I_{sc pv} = I_{sc max} ≥ I_{sc (STC)} x 1.25 according to e.g: IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

Output data	AC rated power (Pac,r)	W	12 000		
	Apparent power	VA	12 000		
	Max. output power	VA	12 000		
			380 Vac	400 Vac	
	Nom. AC output current	A	18,2	17,4	
	Grid connection (Uac,r)	V	3~ NPE 400/230 or 3~ NPE 380/220 (+20 %/-30 %)		
	Frequency (frequency range fmin - fmax)	Hz	50/60 (45 - 65)		
	Total harmonic distortion	%	< 3,5		
	Power factor (cos φac,r)		0.7 - 1 ind. / cap.		

Output data PV Point	Nom. output power PV point	VA	3 000
	Grid connection PV Point	V	1~ NPE 220/230
	Switching time	Sec.	< 23

Output data Full backup ²⁾	Nom. Output power Full Backup	VA	12000
	Nominal phase power Full Backup	VA	4133
	Grid connection full backup	V	3~ NPE 400/230 or 3~ NPE 380/220
	Switching time	Sec.	< 35

2) Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.

Battery connection	Number of DC inputs		1
	Max. input current (Idc max)	A	22
	DC input voltage range (Udc min - Udc max)	V	160 - 531
	DC battery connection technology		1 × BATT+ and 1 × BATT- push-in spring terminals 2.5 - 10 mm ²
	Max. DC input / output power ³⁾	W	11682
	Max. charging power with AC coupling ³⁾	W	11682
	Compatible batteries ⁴⁾		BYD Battery-Box Premium HVS/HVM ⁵⁾ & LG FLEX

3) Dependent on connected battery

4) Dependent on country-specific certification and availability

5) Excluding BYD Battery-Box Premium HVS 12.8 and HVM 8.3

General data	Dimensions (height × width × depth)	mm	595 × 529 × 180
	Weight (inverter / with packaging)	kg	22,8 / 28,0
	Protection class		IP 66
	Safety class		1
	Night consumption	W	< 10
	Overvoltage category (DC/AC) ⁶⁾		2 / 3
	Cooling		Active Cooling Technology
	Installation		Indoor and outdoor installation
	Ambient temperature range	°C	-25 to +60
	Permissible humidity	%	0 - 100
	Noise emissions	dB (A)	< 47

Max. altitude above sea level	m	3,000 / 4,000 (unrestricted / restricted voltage range)
DC connection technology PV		3 × DC+ and 3 × DC- push-in spring-loaded terminals 2.5 - 10 mm ²
Connection technology AC		5-pole AC push-in spring-loaded terminals 1.5 - 10 mm ² 3-pole emergency current push-in spring-loaded terminals 1.5 - 10 mm ² 5 × PE screw terminals 2.5 - 16 mm ²
Certificates and compliance with standards ⁷⁾		IEC 62109, IEC 62116, IEC 61727, IEC 62909, VDE AR-N4105, AS/NZS 4777.2, EN 50549, CEI 0-21, G 98, R25
Backup power functions		PV Point or Full Backup
Life cycle assessment		According to ÖNORM EN ISO 14040 and 14044 (checked by Fraunhofer IZM employees)

Efficiency	Max. efficiency	%	98,2
	European efficiency (η_{EU})	%	97,9
	MPP adaption efficiency	%	> 99,9

Protective devices	DC insulation measurement		Integrated
	DC disconnecter		Integrated
	Reverse polarity protection		Integrated

Interfaces	WLAN / 2 × Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)
	6 digital inputs 6 digital inputs/outputs		Connection to ripple control receiver, energy management
	Emergency shutdown (WSD)		Integrated
	Data logger and web server		Integrated
	2 × RS485		Modbus RTU SunSpec (third-party provider) / Fronius Smart Meter, battery, Fronius Ohmpilot

6) In accordance with IEC 62109-1. Optional retrofittable overvoltage protection DC SPD type 1+2 for 2 MPP trackers available under the following article number: 4,240,313,CK