Symo GEN24

Fronius Symo GEN24
& GEN24 Plus 3.0 - 10.0 kW

The heart of the photovoltaic system

01 Backup power for every situation

A reliable energy supply: the Fronius GEN24 offers just that with an integrated basic backup power function, the PV Point. With the Fronius GEN24 Plus, you can choose between the PV Point and the Full Backup option*, which provides backup power for the entire home.

02 Built-in freedom

The Fronius GEN24 and Fronius GEN24 Plus have open interfaces. This makes it easy to integrate components from Fronius or third-party suppliers for a tailor-made photovoltaic system.

03 Versatility as standard

More functions. More control. More power. Thanks to their energy management functions, the Fronius GEN24 and Fronius GEN24 Plus continuously save time and money. What's more, the integrated active cooling extends the service life of the inverter, protecting your investment for many years to come.

04 Sustainably future-proof

For those who don't want to decide right away: Thanks to the Fronius UP.storage** software upgrade, your device can be retrofitted with the battery connection and therefore the Full Backup power supply at any time.

05 Maximum independence

By combining the Fronius GEN24 Plus with a battery, you can get even more out of your photovoltaic system, even at night. Use more of your own electricity and become more independent of electricity providers and prices.

** The Full Backup power function is not available for the Fronius Symo GEN24 3.0-5.0 Plus.*

*** Available in the Fronius webshop in select countries.*

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The Fronius GEN24 is available in two versions:

– As an inverter: Fronius GEN24

integrated backup power function

– As a hybrid inverter: Fronius GEN24 Plus

battery connection

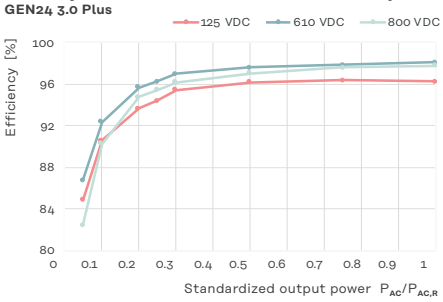
two backup power options

Impressive power data

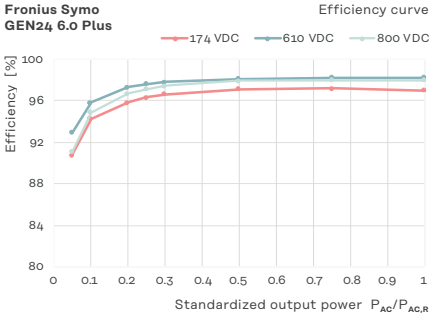
The Fronius GEN24 and GEN24 Plus impress with premium efficiency and maximum power at high temperatures.

Efficiency

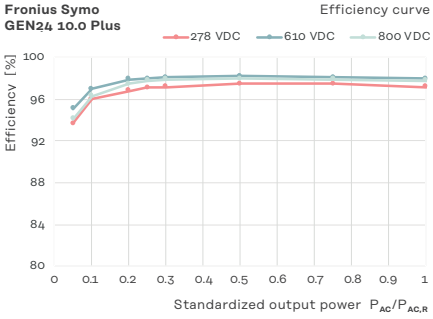
Fronius Symo GEN24 3.0 Plus — Efficiency curve



Fronius Symo GEN24 6.0 Plus — Efficiency curve

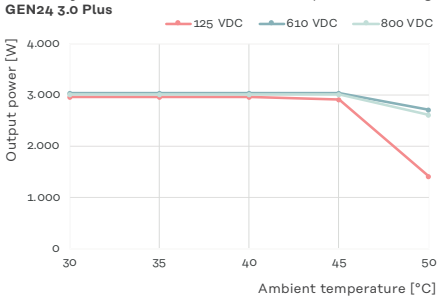


Fronius Symo GEN24 10.0 Plus — Efficiency curve

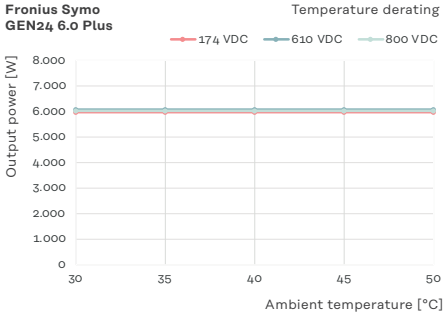


Power derating

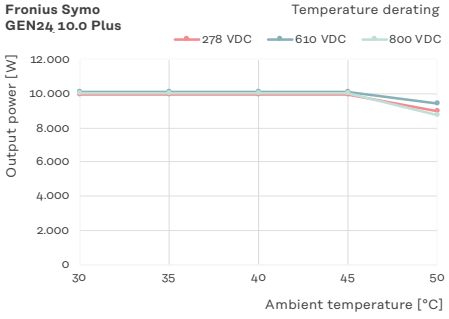
Fronius Symo GEN24 3.0 Plus — Temperature derating



Fronius Symo GEN24 6.0 Plus — Temperature derating



Fronius Symo GEN24 10.0 Plus — Temperature derating



Technical data

3.0/4.0/5.0 kW

			Symo GEN24/GEN24 Plus								
			3.0		4.0			5.0			
Input data	Number of MPP trackers		2		2			2			
	DC input voltage range (Udc min - Udc max)	V	80 - 1,000		80 - 1,000			80 - 1,000			
	Nominal input voltage (Udc,r)	V	610		610			610			
	Feed-in start-up input voltage (Udc start)	V	80		80			80			
	Usable MPP voltage range	V	80 - 800		80 - 800			80 - 800			
	MPP voltage range (at rated power) (Umpp min - Umpp max)	V	125 - 800		170 - 800			210 - 800			
			MPPT1	MPPT2	MPPT1	MPPT2		MPPT1	MPPT2		
	Max. usable input current (Idc max)	A	12.5	12.5	12.5	12.5		12.5	12.5		
	Max. array short circuit current (Isc pv) [1]	A	20	20	20	20		20	20		
	Number of DC connections		2	1	2	1		2	1		
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable DC power	W	3,150	3,150	3,150	4,180	4,180	4,180	5,200	5,200	5,200
	Max. PV generator output	Wpeak	4,500	4,500	4,500	6,000	6,000	6,000	6,500	6,500	7,500

Output data	AC rated power (Pac,r)	W	3,000		4,000		5,000	
	Apparent power	VA	3,000		4,000		5,000	
	Max. output power	VA	3,000		4,000		5,000	
			380 Vac	400 Vac	380 Vac	400 Vac	380 Vac	400 Vac
	Nom. AC output current	A	4.5	4.3	6.1	5.8	7.6	7.2
	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	%	< 3.0		< 3.0		< 3.0	
	Power factor (cos φac,r)		0.7 - 1 ind. / cap.					

Output data PV Point	Nom. output power PV Point	VA	3,000	3,000	3,000
	Grid connection PV Point	V	1~ NPE 220/230		
	Switching time	sec.	< 15	< 15	< 15

Full Backup power and battery function only available with GEN24 Plus

			Symo GEN24 Plus		
			3.0	4.0	5.0
Output data Full Backup [2]	Nom. output power Full Backup	VA	The Full Backup power function is available for the Symo GEN24 6.0-10.0 Plus.		
	Grid connection Full Backup	V			
	Switching time	sec.			

Battery connection	Number of DC inputs		1	1	1
	Max. input current (Idc max)	A	12,5	12,5	12,5
	DC input voltage range (Udc min - Udc max)	V	160 - 700	160 - 700	160 - 700
	DC battery connection technology		1 × BATT+ and 1 × BATT- push-in spring terminals 2.5 - 10 mm²		
	Max. DC input/output power [3]	W	3,150	4,180	5,200
	Max. charging power for AC coupling [3]	W	3,000	4,000	5,000
	Compatible batteries [4]		Fronius Reserva & BYD Battery-Box Premium HVS/HVM		

[1] *Isc pv = Isc max >= Isc (STC) x 1,25 according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.*

[2] *The Full Backup option is available for the Symo GEN24 6.0–10.0 Plus. Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*

[3] *Depending on connected battery*

[4] *Compatibility with the Fronius GEN24 Plus varies depending on the battery storage type and capacity class, country-specific certification and availability. More information: www.fronius.com/battery-overview*

			Symo GEN24/GEN24 Plus		
			3.0	4.0	5.0
General data	Dimensions (height × width × depth)	mm	530 × 474 × 165		
	Weight (inverter/with packaging)	kg	15.6/19,4	15.6/19,4	15.6/19,4
	Protection class		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night consumption	W	< 10	< 10	< 10
	Overvoltage category (DC/AC) [5]		2/3	2/3	2/3
	Cooling		Active Cooling technology		
	Installation		Indoor and outdoor installation		
	Ambient temperature range	°C	-25 to +60	-25 to +60	-25 to +60
	Permissible humidity	%	0 - 100	0 - 100	0 - 100
	Noise emissions	dB (A)	< 36	< 36	< 36
	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 terminals 2.5 - 10 mm²		
	AC connection technology		5-pin AC push-in spring terminals 1.5 - 10 mm² 3-pin backup power push-in spring terminals 1.5 - 10 mm² 5 × PPE screw terminals 2.5 - 16 mm²		
	Certificates and compliance with standards [6]		IEC 62109, IEC 62116, IEC 61727, IEC 62909, VDE 0126, VDE AR-N4105, AS/NZS 4777.2, EN 50549, CEI 0-21, G98/G99, R25		
	Backup power functions		PV Point		
	Country of manufacture		Austria		
	Life cycle analysis		In accordance with ÖNORM EN ISO 14040 and 14044 (checked by employees from Fraunhofer IZM)		
Efficiency	Max. efficiency	%	98.1	98.2	98.2
	Euro. efficiency (ηEU)	%	96.7	97.2	97.5
	MPP adaptation efficiency	%	> 99.9	> 99.9	> 99.9
Protection devices	DC isolation measurement		Integrated		
	DC disconnector		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 shut-off (WSD)		Integrated		
	Datalogger and web server		Integrated		
	2 × RS485		Modbus RTU SunSpec (third-party provider)/Fronius Smart Meter, battery (GEN24 Plus), Fronius Ohmpilot		

[5] *In line with IEC 62109-1. Option to retrofit surge protection device DC SPD type 1+2 for 2 MPP trackers available under the following item number: 4,240,313,CK*

[6] *You can find the current certificates under www.fronius.com/symo-gen24-plus-cert*

For further information on the availability of the inverters in your country, please visit www.fronius.com.

Technical data

6.0/8.0/10.0 kW

			Symo GEN24/GEN24 Plus								
			6.0			8.0			10.0		
Input data	Number of MPP trackers		2			2			2		
	DC input voltage range (Udc min - Udc max)	V	80 - 1,000			80 - 1,000			80 - 1,000		
	Nominal input voltage (Udc,r)	V	610			610			610		
	Feed-in start-up input voltage (Udc start)	V	80			80			80		
	Usable MPP voltage range	V	80 - 800			80 - 800			80 - 800		
	MPP voltage range (at rated power) (Umpp min - Umpp max)	V	174 - 800			224 - 800			278 - 800		
			MPPT1	MPPT2		MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current (Idc max)	A	25	12.5		25	12.5		25	12.5	
	Max. array short circuit current (Isc pv) [1]	A	40	20		40	20		40	20	
	Number of DC connections		2	1		2	1		2	1	
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable DC power	W	6,220	6,000	6,220	7,200	6,000	8,260	7,200	6,000	10,300
	Max. PV generator output	Wpeak	7,200	6,500	9,000	7,200	7,000	12,000	7,200	7,200	14,400

Output data	AC rated power (Pac,r)	W	6,000		8,000		9,999	
	Apparent power	VA	6,000		8,000		9,999	
	Max. output power	VA	6,000		8,000		9,999	
			380 Vac	400 Vac	380 Vac	400 Vac	380 Vac	400 Vac
	Nom. AC output current	A	9.1	8.7	12.1	11.6	15.2	14.5
	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		< 3		< 3	
	Power factor (cos φac,r)		0.7 - 1 ind. / cap.					

Output data PV Point	Nom. output power PV Point	VA	3.000	3.000	3.000
	Grid connection PV Point	V	1~ NPE 220/230		
	Switching time	sec.	< 15	< 15	< 15

Full Backup power and battery function only available with GEN24 Plus

			Symo GEN24 Plus		
			6.0	8.0	10.0
Output data Full Backup [2]	Nom. output power Full Backup	VA	6.000	8.000	9.999
	Nominal Full Backup phase power	VA	3.680	3.680	3.680
	Grid connection Full Backup	V	3~ NPE 400/230 or 3~ NPE 380/220		
	Switching time	sec.	< 10	< 10	< 10

Battery connection	Number of DC inputs		1	1	1
	Max. input current (Idc max)	A	22	22	22
	DC input voltage range (Udc min - Udc max)	V	160 - 700	160 - 700	160 - 700
	DC battery connection technology		1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm²		
	Max. DC input/output power [3]	W	6,220	8,260	10,300
	Max. charging power for AC coupling [3]	W	6,000	8,000	10,000
	Compatible batteries [4]		Fronius Reserva & BYD Battery-Box Premium HVS/HVM		

[1] *Isc pv = Isc max >= Isc (STC) x 1,25 according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.*

[2] *The Full Backup option is available for the Symo GEN24 6.0–10.0 Plus. Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*

[3] *Depending on connected battery*

[4] *Compatibility with the Fronius GEN24 Plus varies depending on the battery storage type and capacity class, country-specific certification and availability. More information: www.fronius.com/battery-overview*

			Symo GEN24/GEN24 Plus		
			6.0	8.0	10.0
General data	Dimensions (height × width × depth)	mm	595 × 529 × 180		
	Weight (inverter/with packaging)	kg	23.4/28.5	23.4/28.5	23.4/28.5
	Protection class		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night consumption	W	< 10	< 10	< 10
	Overvoltage category (DC/AC) [5]		2/3	2/3	2/3
	Cooling		Active Cooling technology		
	Installation		Indoor and outdoor installation		
	Ambient temperature range	°C	-25 to +60	-25 to +60	-25 to +60
	Permissible humidity	%	0 - 100	0 - 100	0 - 100
	Noise emissions	dB (A)	< 47	< 47	< 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 terminals 2.5 - 10 mm²		
	AC connection technology		5-pin AC push-in spring terminals 1.5 - 10 mm² 3-pin backup power push-in spring terminals 1.5 - 10 mm² 5 × PPE screw terminals 2.5 - 16 mm²		
	Certificates and compliance with standards [6]		IEC 62109, IEC 62116, IEC 61727, IEC 62909, VDE 0126, VDE AR-N4105, AS/NZS 4777.2, EN 50549, CEI 0-21, G98/G99, R25		
	Backup power functions [7]		PV Point or Full Backup		
	Country of manufacture		Austria		
	Life cycle analysis		In accordance with ÖNORM EN ISO 14040 and 14044 (checked by employees from Fraunhofer IZM)		
Efficiency	Max. efficiency	%	98.2	98.2	98.2
	Euro. efficiency (ηEU)	%	97.7	97.8	97.9
	MPP adaptation efficiency	%	> 99.9	> 99.9	> 99.9
Protection devices	DC isolation measurement		Integrated		
	DC disconnector		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 shut-off (WSD)		Integrated		
	Datalogger and web server		Integrated		
	2 × RS485		Modbus RTU SunSpec (third-party provider)/Fronius Smart Meter, battery (GEN24 Plus), Fronius Ohmpilot		

[5] *In line with IEC 62109-1. Option to retrofit surge protection device DC SPD type 1+2 for 2 MPP trackers available under the following item number: 4,240,313,CK*

[6] *You can find the current certificates under www.fronius.com/symo-gen24-plus-cert*

[7] *Full Backup power ist only available with GEN24 Plus.*

For further information on the availability of the inverters in your country, please visit www.fronius.com.

One-stop-shop

Fronius now offers all the components for 24 hours of sun - a complete PV system from a single source. Electricity, heating, cooling, e-mobility – everything is possible with GEN24 Plus, even at night. The battery-enabled inverter is perfectly matched to the Fronius storage solution, Reserva, and makes you even more independent.

The Fronius storage solution

Make yourself independent and utilise solar energy around the clock. The Fronius Reserva is a high-voltage battery with DC coupling that guarantees particularly effective and efficient energy transfer. With capacities from 6.3 to 15.8 kWh, it adapts flexibly to your needs.

Backup power for every eventuality

With the Fronius Backup Controller, you can switch to full backup power operation automatically. The cost-effective switching component can be installed in the control cabinet to save space and eliminate the need for additional hardware such as switch boxes.

Charge electric cars cost-effectively

With PV-optimised wallboxes such as the Fronius Wattpilot Flex, you can charge intelligently and flexibly. The PV-optimized wallbox automatically switches between 1 and 3 phases to make the best possible use of the sun's power. If you have a PV system, Fronius Wattpilot Flex gives you a double benefit: you save on charging and also increase your own consumption - which speeds up the amortization of your PV system.

For further information, please visit: www.fronius.com/en/solar-energy

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