



# FRONIUS SYMO GEN24 PLUS

The hybrid allrounder with individual backup power



Integrated Data Communication



Dynamic Peak Manager



Multi Flow Technology



SuperFlex Design



Full backup<sup>1)</sup>



PV Point basic grid backup

The Fronius Symo GEN24 Plus, with power categories of between 3 and 10 kW, is the ideal hybrid inverter for private households. With many features as standard, the three-phase device covers all customer requirements.

The GEN24 Plus leaves nothing to be desired with numerous features such as energy management functions, WLAN connection as standard, Ethernet connectivity and easy integration of third-party components. Thanks to a selection of backup power options (PV Point, full backup<sup>1)</sup>) in particular, it ensures the highest degree of power supply reliability.

## TECHNICAL DATA FRONIUS SYMO GEN24 PLUS (3.0, 4.0, 5.0)

INPUT DATA	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
Number of MPP trackers		2	
Max. usable input current ( $I_{dc \max}$ MPPT1 / MPPT2)		12.5 A / 12.5 A	
Max. array short circuit current (MPPT1/MPPT2)		18.75 A / 18.75 A	
DC input voltage range ( $U_{dc \min}$ - $U_{dc \max}$ )		80 V - 1000 V	
Nominal input voltage ( $U_{dc, I}$ )		610 V	
Feed-in start voltage ( $U_{dc \text{ start}}$ )		80 V	
Usable MPP voltage range		80 V - 800 V	
Number of DC connections (MPPT1 / MPPT2)		2 / 1	
Max. usable DC power (MPPT1/MPPT2/total)	3,150 / 3,150 / 3,150 W	4,180 / 4,180 / 4,180 W	5,200 / 5,200 / 5,200 W
Max. PV generator power (MPPT1/MPPT2/total)	4.5 / 4.5 / 4.5 kW <sub>peak</sub>	6 / 6 / 6 kW <sub>peak</sub>	6.5 / 6.5 / 7.5 kW <sub>peak</sub>

OUTPUT DATA	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
AC nominal output ( $P_{ac, I}$ )	3000 W	4000 W	5000 W
Max. output power / rated apparent power	3000 VA	4000 VA	5000 VA
Nom. AC output current (380Vac / 400Vac)	4.5 / 4.3 A	6.1 / 5.8 A	7.6 / 7.2 A
Grid connection (voltage range)		3~NPE 400 V / 230 V or 3~NPE 380 V / 220 V (+ 20 % / - 30%)	
Frequency (frequency range)		50 Hz / 60 Hz (45 Hz - 66 Hz)	
Total harmonic distortion		< 3.5 %	
Power factor ( $\cos \phi_{ac, I}$ )		0.7 - 1 ind. / cap.	

OUTPUT DATA PV POINT	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
Nom. output power PV Point		3000 VA	
Grid connection PV Point		1 ~ NPE 220 V / 230 V	
Switchover time		< 90 seconds	

<sup>1)</sup> The Full Backup Option is available for the Symo GEN24 6.0 - 10.0 Plus. For the Full Backup, additional external components for grid separation are required. You can find more information on this in the operating instructions.

## TECHNICAL DATA FRONIUS SYMO GEN24 PLUS (3.0, 4.0, 5.0)

BATTERY CONNECTION	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
Number of DC connections		1	
Max. input current ( $I_{dc\ max}$ )		12.5 A	
DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )		160 V - 531 V	
Max. DC input / output power <sup>2)</sup>	3,150 W	4,180 W	5,200 W
Max. charging power with AC coupling	3,000 W	4,000 W	5,000 W

GENERAL DATA	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
Dimensions (height x width x depth)		530 x 474 x 165 mm	
Weight (inverter / with packaging)		15,6 / 19,4	
Degree of protection		IP 66	
Protection class		1	
Nighttime power loss		< 10 W	
Overvoltage category (DC/AC) <sup>3)</sup>		2 / 3	
Inverter design		Transformerless	
Cooling		Regulated air cooling	
Installation		Indoor and outdoor installation	
Ambient temperature range		- 25 - +60 °C	
Permitted humidity		0 - 100 %	
Noise Emission		< 36 dB (A)	
Max. altitude		3,000 m / 4,000 m (unrestricted / restricted voltage range)	
DC PV connection technology		3x DC+ and 3x DC- push-in spring terminals 2.5 - 10 mm <sup>2</sup>	
DC battery connection technology		1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm <sup>2</sup>	
AC connection technology		5 pole AC push-in spring terminals 1.5 - 10 mm <sup>2</sup> 3 pole backup power push-in spring terminals 1.5mm <sup>2</sup> - 10mm <sup>2</sup> 5x PE-screw terminals 2.5 - 16 mm <sup>2</sup>	
Certificates and compliance with standards		IEC 62109, IEC 62116, IEC 61727, IEC 62909, VDE 0126, VDE AR-N4105, AS/NZS 4777.2, EN 50549, CEI 0-21, G 98, R25 <sup>4)</sup>	
Back-up power functions		PV Point	
Compatible batteries		BYD Battery-Box Premium HVS/HVM <sup>5)</sup>	
Country of manufacture		Austria	

EFFICIENCY	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
Max. efficiency	98.1 %	98.2 %	98.2 %
Europ. efficiency ( $\eta_{EU}$ )	96.7 %	97.2 %	97.5 %
MPP-tracking efficiency		> 99.9 %	

PROTECTIVE DEVICES	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
DC insulation measurement		Yes	
DC insulation measurement		Operating point shift. Power limitation	
DC disconnect		Yes	
Reverse polarity protection		Yes	

INTERFACES	SYMO GEN24 3.0 PLUS	SYMO GEN24 4.0 PLUS	SYMO GEN24 5.0 PLUS
WLAN / 2x Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)	
6x digital in/out + 6x digital in		Interface to ripple control receiver, energy management	
Emergency stop (WSD)		Yes	
Datalogger and webserver		Included	
2x RS485		Modbus RTU SunSpec (third-party supplier) / Fronius Smart Meter, battery, Fronius Ohmpilot	

<sup>2)</sup> Depending on the connected battery

<sup>3)</sup> According to IEC 62109-1. Optional retrofit surge protection device DC SPD type 1+2 for 2 MPP trackers available under the following article number: 4,240,313,CK

<sup>4)</sup> For the current certificates, please see [www.fronius.com](http://www.fronius.com)

<sup>5)</sup> Except HVS 12.8 and HVM 8.3

For further information on the availability of this inverter in your country please see [www.fronius.com](http://www.fronius.com).

## TECHNICAL DATA FRONIUS SYMO GEN24 PLUS (6.0, 8.0, 10.0)

INPUT DATA	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
Number of MPP trackers	2		
Max. usable input current ( $I_{dc \max}$ MPPT1 / MPPT2)	25 A / 12,5 A		
Max. array short circuit current (MPPT1/MPPT2)	37.5 A / 18.75 A		
DC input voltage range ( $U_{dc \min}$ - $U_{dc \max}$ )	80 V - 1,000 V		
Nominal input voltage ( $U_{dc,r}$ )	610 V		
Feed-in start voltage ( $U_{dc \text{ start}}$ )	80 V		
Usable MPP voltage range	80 V - 800 V		
Number of DC connections (MPPT1 / MPPT2)	2 / 1		
Max. usable DC power (MPPT1/MPPT2/total)	6,220 / 6,000 / 6,220 W	8,260 / 6,000 / 8,260 W	10,300 / 6,000 / 10,300 W
Max. PV generator power (MPPT1/MPPT2/total)	7.5 / 6.5 / 9 kW <sub>peak</sub>	10 / 7 / 12 kW <sub>peak</sub>	12.5 / 7.5 / 15 kW <sub>peak</sub>

OUTPUT DATA	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
AC nominal output ( $P_{ac,r}$ )	6,000 W	8,000 W	10,000 W
Max. output power / rated apparent power	6,000 VA	8,000 VA	10,000 VA
Nom. AC output current (380Vac / 400Vac)	9.1 / 8.7 A	12.1 / 11.6 A	15.2 / 14.5 A
Grid connection (voltage range)	3~NPE 400 V / 230 V or 3~NPE 380 V / 220 V (+20 % / -30%)		
Frequency (frequency range)	50 Hz / 60 Hz (45 Hz – 66 Hz)		
Total harmonic distortion	< 3.5 %		
Power factor ( $\cos \phi_{ac,r}$ )	0.7 - 1 ind. / cap.		
Backup power	3~NPE 400 V / 230 V		

OUTPUT DATA PV POINT / FULL BACKUP <sup>1)</sup>	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
Nom. output power PV Point / full backup	3,000 VA / 6,000 VA	3,000 VA / 8,000 VA	3,000 VA / 10,000 VA
Nominal power per phase full backup	3.68 kVA		
Grid connection (voltage range) PV Point	1 ~ NPE 220 V / 230 V		
Grid connection (voltage range) full backup	3~NPE 400V/230V or 3~NPE 380V/220V		
Switchover time	< 90 seconds		

<sup>1)</sup> The Full Backup Option is available for the Symo GEN24 6.0 - 10.0 Plus. For the Full Backup, additional external components for grid separation are required. You can find more information on this in the operating instructions.

## TECHNICAL DATA FRONIUS SYMO GEN24 PLUS (6.0, 8.0, 10.0)

BATTERY CONNECTION	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
Number of DC connections		1	
Max. input current ( $I_{dc\ max}$ )		22 A	
DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )		160 V - 531 V	
Max. DC input / output power <sup>2)</sup>	6,220 W	8,260 W	10,300 W
Max. charging power with AC coupling	6,000 W	8,000 W	10,000 W

GENERAL DATA	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
Dimensions (height x width x depth)		595 x 529 x 180 mm	
Weight (inverter / with packaging)		23,4 / 28,5 kg	
Degree of protection		IP 66	
Protection class		1	
Nighttime power loss		< 10 W	
Overvoltage category (DC/AC) <sup>3)</sup>		2 / 3	
Inverter design		Transformerless	
Cooling		Regulated air cooling	
Installation		Indoor and outdoor installation	
Ambient temperature range		-25 - +60 °C	
Permitted humidity		0 - 100 %	
Noise Emission		< 47 dB (A)	
Max. altitude		3,000 m / 4,000 m (unrestricted / restricted voltage range)	
DC PV connection technology		3x DC+ and 3x DC- push-in spring terminals 2.5 - 10 mm <sup>2</sup>	
DC battery connection technology		1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm <sup>2</sup>	
AC connection technology		5 pole AC push-in spring terminals 1.5 - 10 mm <sup>2</sup> 3 pole backup power push-in spring terminals 1.5mm <sup>2</sup> - 10mm <sup>2</sup> 5x PE-screw terminals 2.5 - 16 mm <sup>2</sup>	
Certificates and compliance with standards		IEC 62109, IEC 62116, IEC 61727, IEC 62909, VDE 0126, VDE AR-N4105, AS/NZS 4777.2, EN 50549, CEI 0-21, G 98, R25 <sup>4)</sup>	
Back-up power functions		PV Point or Full Backup	
Compatible batteries		BYD Battery-Box Premium HVS/HVM <sup>5)</sup>	
Country of manufacture		Austria	

EFFICIENCY	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
Max. efficiency		98.2 %	
Europ. efficiency ( $\eta_{EU}$ )	97.7 %	97.8 %	97.9 %
MPP-tracking efficiency		> 99.9 %	

PROTECTIVE DEVICES	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
DC insulation measurement		Yes	
Overload behaviour		Operating point shift. Power limitation	
DC disconnect		Yes	
Reverse polarity protection		Yes	

INTERFACES	SYMO GEN24 6.0 PLUS	SYMO GEN24 8.0 PLUS	SYMO GEN24 10.0 PLUS
WLAN / 2x Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)	
6x digital in/out + 6x digital in		Interface to ripple control receiver, energy management	
Emergency stop (WSD)		Yes	
Datalogger and webserver		Included	
2x RS485		Modbus RTU SunSpec (third-party supplier) / Fronius Smart Meter, battery, Fronius Ohmpilot	

<sup>2)</sup> Depending on the connected battery

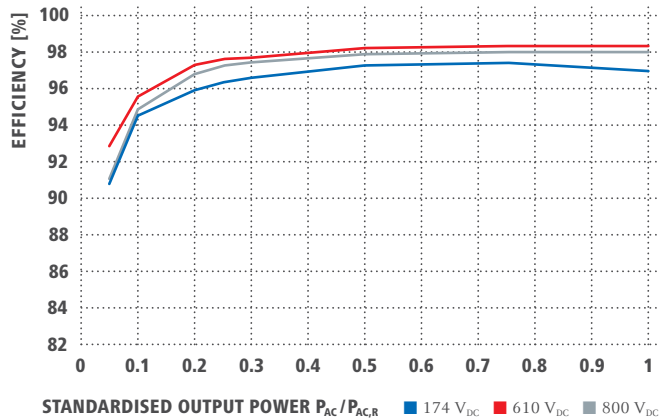
<sup>3)</sup> According to IEC 62109-1. Optional retrofit surge protection device DC SPD type 1+2 for 2 MPP trackers available under the following article number: 4,240,313,CK

<sup>4)</sup> For the current certificates, please see [www.fronius.com](http://www.fronius.com)

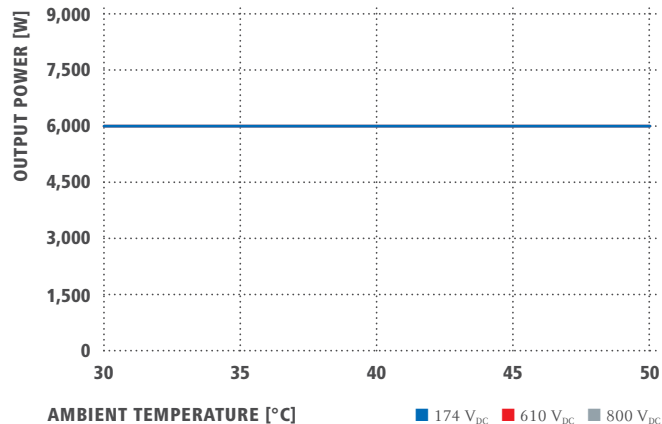
<sup>5)</sup> Except HVS 12.8 and HVM 8.3

For further information on the availability of this inverter in your country please see [www.fronius.com](http://www.fronius.com).

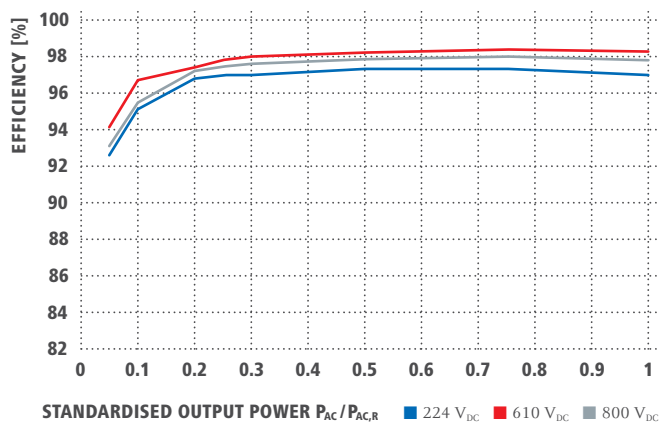
## FRONIUS SYMO GEN24 PLUS 6.0 EFFICIENCY CURVE



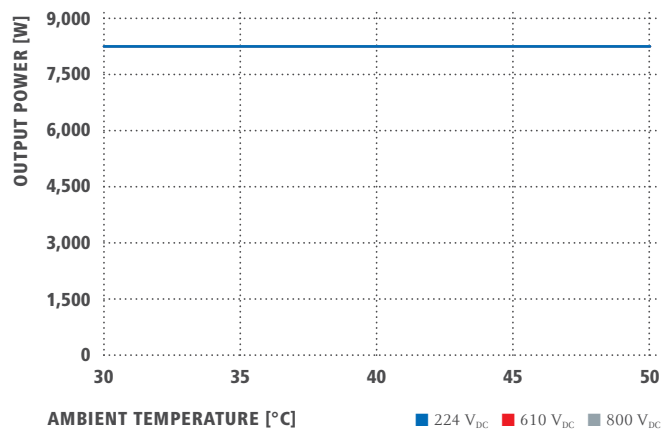
## FRONIUS SYMO GEN24 PLUS 6.0 TEMPERATURE DERATING



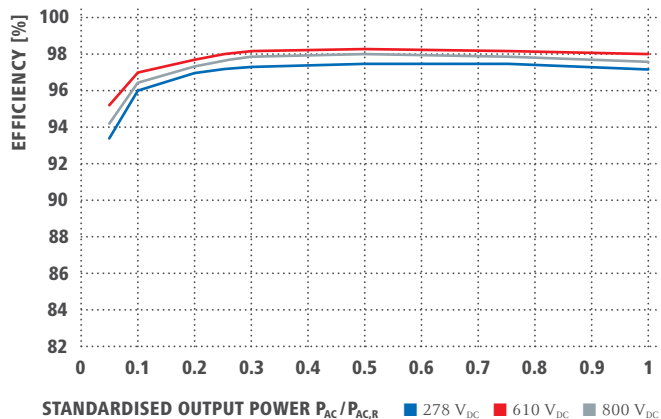
## FRONIUS SYMO GEN24 PLUS 8.0 EFFICIENCY CURVE



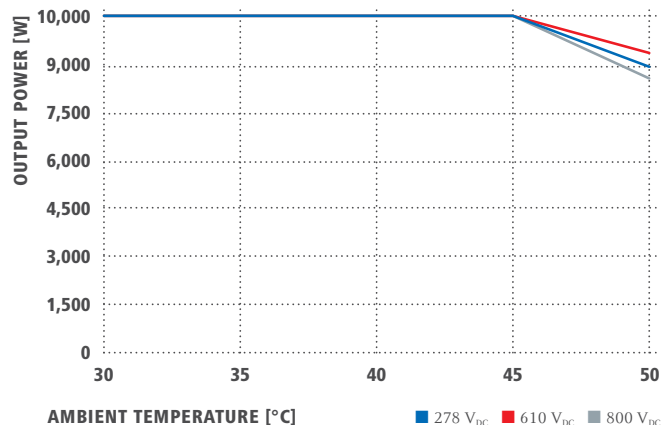
## FRONIUS SYMO GEN24 PLUS 8.0 TEMPERATURE DERATING



## FRONIUS SYMO GEN24 PLUS 10.0 EFFICIENCY CURVE



## FRONIUS SYMO GEN24 PLUS 10.0 TEMPERATURE DERATING



# THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 5,660 employees worldwide and 1,321 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

## PERFECT WELDING

Our mission is Perfect Welding; a task we have approached with passion and skill for decades in order that our customers can join materials with the perfect weld seam. With our outstanding technologies and services and together with our customer's applications, not only do we solve their specific welding technology problems, but we also make a substantial contribution to increasing their productivity.

## SOLAR ENERGY

Our mission is to achieve 24 hours of sun. Day after day we are hard at work turning this vision of a future in which 100% of the world's energy needs are covered by renewable sources into a reality. We are therefore concentrating on solutions to intelligently, efficiently and economically generate, store, distribute and consume solar energy.

## PERFECT CHARGING

As know-how leaders in the world of battery charging, we deliver exceptional solutions to create the maximum benefit for our customers. For the intralogistics sector, we are committed to energy flow optimisation for electric forklift trucks and are constantly striving for the next innovation. Our powerful charging systems for vehicle workshops guarantee safe and reliable processes.

Further information about all Fronius products and our global sales partners and representatives can be found at [www.fronius.com](http://www.fronius.com)

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