/ Perfect Welding / Solar Energy / Perfect Charging

FRONIUS PRIMO GEN24 PLUS

The hybrid allrounder with individual backup power

Integrated Data Communication

Dynamic Peak Manager

Multi Flow Technology

SuperFlex Design

Full backup

PV Point basic grid backup

The Fronius Primo GEN24 Plus, with power categories of between 3 and 6 kW, is the ideal hybrid inverter for private households. With many features as standard, the single-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) in particular, it ensures the highest degree of power supply reliability.

TECHNICAL DATA FRONIUS PRIMO GEN24 PLUS (3.0, 3.6, 4.0)

INPUT DATA	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
Number of MPP trackers		2	
Max. input current ($I_{dc\ max\ MPPT1\ /\ MPPT2}$)		22 A / 12 A	
Max. array short circuit current (MPPT1 / MPPT2)		33 A / 18 A	
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)		65 V - 600 V	
Nominal input voltage ($U_{dc,r}$)		400 V	
Feed-in start voltage ($U_{dc\ start}$)		80 V	
Usable MPP voltage range		65 V - 530 V	
Number of DC connections (MPPT1 / MPPT2)		2 / 2	
Max. usable DC power (MPPT1/MPPT2/total)	3,110 / 3,110 / 3,110 W	3,810 / 3,810 / 3,810 W	4,140 / 4,140 / 4,140 W
Max. PV generator power (MPPT1/MPPT2/total)	3.75 / 3.11 / 4.5 kW_{peak}	4.6 / 3.81 / 5.52 kW_{peak}	5 / 4.14 / 6 kW_{peak}

OUTPUT DATA	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
AC nominal output ($P_{ac,r}$)	3,000 W	3,680 W	4,000 W
Max. output power / max. rated apparent power	3,000 VA	3,680 VA	4,000 VA
Max. output current ($I_{ac\ max}$)	19.40 A	23.70 A	25.80 A
Grid connection (voltage range)		1~NPE 220 V / 230 V (+ 20 % / - 30 %)	
Frequency (frequency range)		50 Hz / 60 Hz (45 Hz – 65 Hz)	
Total harmonic distortion		< 2 %	
Power factor ($\cos \phi_{ac,r}$)		0,8 - 1 ind. / cap.	
Backup power		1~NPE 220 V / 230 V	

OUTPUT DATA PV POINT / FULL BACKUP [1]	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
Nom. output power PV Point / full backup	3,000 VA / 3,000 VA	3,000 VA / 3,600 VA	3,000 VA / 4,000 VA
Grid connection (voltage range) PV Point		1 ~ NPE 220 V / 230 V	
Grid connection (voltage range) full backup		1 ~ NPE 220 V / 230 V	
Switchover time		< 90 seconds	

BATTERY CONNECTION	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
Number of DC connections		1	
Max. input current ($I_{dc\ max}$)		22 A	
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)		150 V - 455 V	
Max. input / output power [2]	3,110 W	3,810 W	4,140 W
Max. AC charging power	3,000 W	3,680 W	4,000 W

[1] 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 PRIMO GEN24 PLUS (3.0, 3.6, 4.0)

GENERAL DATA	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
Dimensions (height x width x depth)	530 x 474 x 165 mm		
Weight (inverter / with packaging)	15.4 / 19 kg		
Degree of protection	IP 66		
Protection class	1		
Nighttime power loss	< 10 W		
Overvoltage category (DC/AC) [3]	2 / 3		
Inverter design	Transformerless		
Cooling	Regulated air cooling		
Installation	Indoor and outdoor installation		
Ambient temperature range	-40 - +60 °C		
Permitted humidity	0 - 100 %		
Noise Emission	< 42 dB (A)		
Max. altitude	4,000 m		
DC PV connection technology	4x DC+ and 4x DC- push-in spring terminals 2.5 - 10 mm²		
DC battery connection technology	1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm²		
AC connection technology	3 pole AC push-in spring terminals 2.5 - 10 mm² 3 pole backup power push-in spring terminals 1.5mm² - 10mm² 2x PE screw terminals 2.5 - 16 mm² and 3x 2.5 – 10mm²		
Certificates and compliance with standards	IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 and 16150, IEC 62116, IEC 61727 [4]		
Back-up power functions	PV Point or full backup		
Compatible batteries	BYD Battery-Box Premium HVS/HVM [5]		
Country of manufacture	Austria		

EFFICIENCY	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
Max. efficiency		97.6 %	
Europ. efficiency (ηEU)	96.8 %	97.0 %	97.1 %
MPP-tracking efficiency		> 99.9 %	

PROTECTIVE DEVICES	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 PLUS
DC insulation measurement	Yes		
Overload behaviour	Operating point shift. Power limitation		
DC disconnector	Yes		
Reverse polarity protection	Yes		

INTERFACES	PRIMO GEN24 3.0 PLUS	PRIMO GEN24 3.6 PLUS	PRIMO GEN24 4.0 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		
USB 2.0 (A-socket)	1 A supply		
Emergency stop (WSD)	Yes		
Datalogger and Webserver	Included		
2x RS485	Modbus RTU SunSpec (third-party supplier) / Fronius Smart Meter, battery, Fronius Ohmpilot		

[2] Depending on the connected battery

[3] 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

[4] For the current certificates, please see **www.fronius.com/primo-gen24-plus-cert**

[5] Except HVS 10.2, HVS 12.8, HVM 8.3 and HVM 22.1

For further information on the availability of this inverter in your country please see **www.fronius.com.**

TECHNICAL DATA FRONIUS PRIMO GEN24 PLUS (4.6, 5.0, 6.0)

INPUT DATA	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
Number of MPP trackers		2	
Max. input current ($I_{dc\ max\ MPPT1\ /\ MPPT2}$)		22 A / 12 A	
Max. array short circuit current (MPPT1 / MPPT2)		33 A / 18 A	
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)		65 V - 600 V	
Nominal input voltage ($U_{dc,r}$)		400 V	
Feed-in start voltage ($U_{dc\ start}$)		80 V	
Usable MPP voltage range	65 V - 530 V		65 V - 480 V
Number of DC connections (MPPT1 / MPPT2)		2 / 2	
Max. usable DC power (MPPT1/MPPT2/total)	4,750 / 4,750 / 4,750 W	5,170 / 5,170 / 5,170 W	6,200 / 5,760 / 6,200 W
Max. PV generator power (MPPT1/MPPT2/total)	5.75 / 4.75 / 6.9 kW_{peak}	6.25 / 5.17 / 7.5 kW_{peak}	7.5 / 5.76 / 9 kW_{peak}

OUTPUT DATA	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
AC nominal output ($P_{ac,r}$)	4,600 W	5,000 W	6,000 W
Max. output power / max. rated apparent power	4,600 VA	5,000 VA	6,000 VA
Max. output current ($I_{ac\ max}$)	27.50 A	27.50 A	27.50 A
Grid connection (voltage range)		1~NPE 220 V / 230 V (+ 20 % / - 30 %)	
Frequency (frequency range)		50 Hz / 60 Hz (45 Hz – 65 Hz)	
Total harmonic distortion		< 2 %	
Power factor (cos $\phi_{ac,r}$)		0,8 - 1 ind. / cap.	
Backup power		1~NPE 220 V / 230 V	

OUTPUT DATA PV POINT / FULL BACKUP [1]	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
Nom. output power PV Point / full backup	3,000 VA / 4,600 VA	3,000 VA / 5,000 VA	3,000 VA / 6,000 VA
Grid connection (voltage range) PV Point		1 ~ NPE 220 V / 230 V	
Grid connection (voltage range) full backup		1 ~ NPE 220 V / 230 V	
Switchover time		< 90 seconds	

BATTERY CONNECTION	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
Number of DC connections		1	
Max. input current ($I_{dc\ max}$)		22 A	
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)		150 V - 455 V	
Max. input / output power [2]	4,750 W	5,170 W	6,200 W
Max. AC charging power	4,600 W	5,000 W	6,000 W

[1] 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 PRIMO GEN24 PLUS (4.6, 5.0, 6.0)

GENERAL DATA	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
Dimensions (height x width x depth)	530 x 474 x 165 mm		
Weight (inverter / with packaging)	15.4 / 19 kg		
Degree of protection	IP 66		
Protection class	1		
Nighttime power loss	< 10 W		
Overvoltage category (DC/AC) [3]	2 / 3		
Inverter design	Transformerless		
Cooling	Regulated air cooling		
Installation	Indoor and outdoor installation		
Ambient temperature range	-40 - +60 °C		
Permitted humidity	0 - 100 %		
Noise Emission	< 42 dB (A)		
Max. altitude	4,000 m		
DC PV connection technology	4x DC+ and 4x DC- push-in spring terminals 2.5 - 10 mm²		
DC battery connection technology	1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm²		
AC connection technology	3 pole AC push-in spring terminals 2.5 - 10 mm² 3 pole backup power push-in spring terminals 1.5mm² - 10mm² 2x PE screw terminals 2.5 - 16 mm² and 3x 2.5 – 10mm²		
Certificates and compliance with standards	IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 and 16150, IEC 62116, IEC 61727 [4]		
Back-up power functions	PV Point or full backup		
Compatible batteries	BYD Battery-Box Premium HVS/HVM [5]		
Country of manufacture	Austria		

EFFICIENCY	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
Max. efficiency		97.6 %	
Europ. efficiency (ηEU)	97.2 %	97.2 %	97.1 %
MPP-tracking efficiency		> 99.9 %	

PROTECTIVE DEVICES	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 PLUS
DC insulation measurement	Yes		
Overload behaviour	Operating point shift. Power limitation		
DC disconnector	Yes		
Reverse polarity protection	Yes		

INTERFACES	PRIMO GEN24 4.6 PLUS	PRIMO GEN24 5.0 PLUS	PRIMO GEN24 6.0 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		
USB 2.0 (A-socket)	1 A supply		
Emergency stop (WSD)	Yes		
Datalogger and Webserver	Included		
2x RS485	Modbus RTU SunSpec (third-party supplier) / Fronius Smart Meter, battery, Fronius Ohmpilot		

[2] Depending on the connected battery

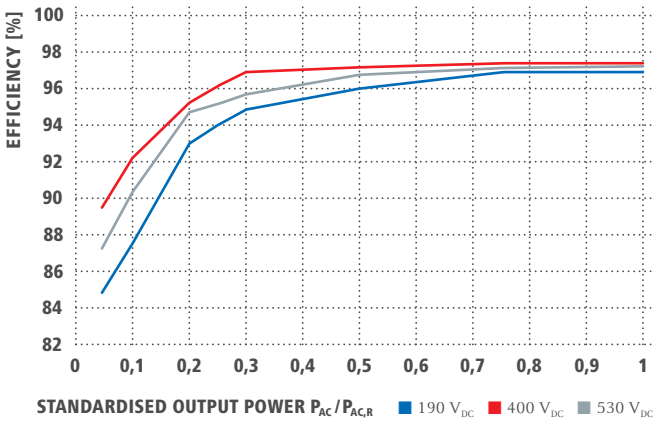
[3] According to IEC 62109-1. Optional retrofit surge protection device DC SPD type 1+2 for 2 MPP trackers available under the following article number: 4,240,313,CK

[4] For the current certificates, please see **www.fronius.com/primo-gen24-plus-cert**

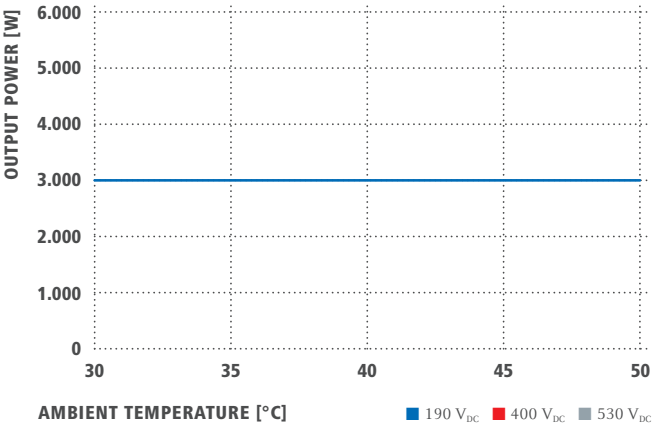
[5] Except HVS 10.2, HVS 12.8, HVM 8.3 and HVM 22.1

For further information on the availability of this inverter in your country please see **www.fronius.com.**

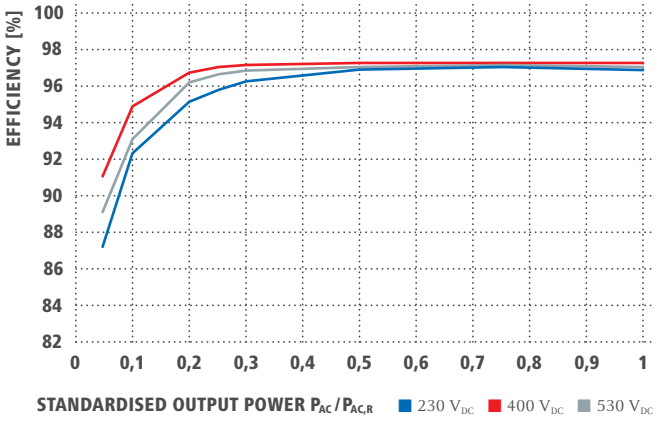
FRONIUS PRIMO GEN24 PLUS 3.0 EFFICIENCY CURVE



FRONIUS PRIMO GEN24 PLUS 3.0 TEMPERATURE DERATING



FRONIUS PRIMO GEN24 PLUS 5.0 EFFICIENCY CURVE



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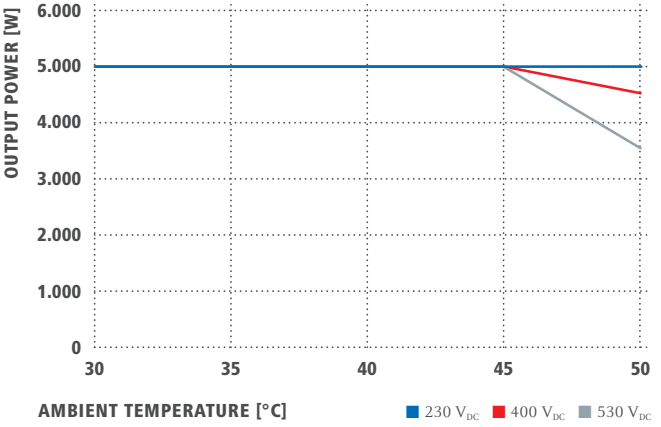
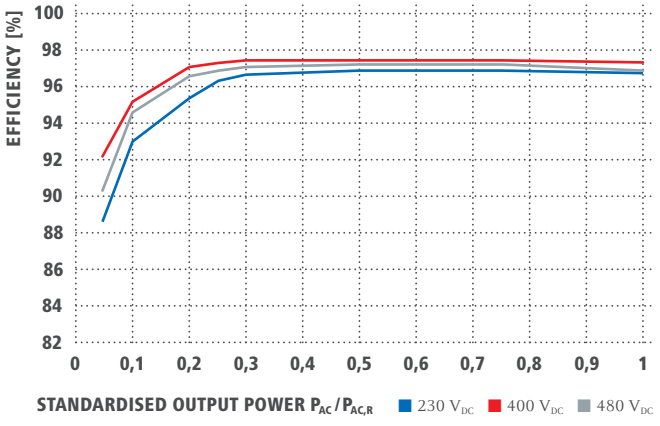
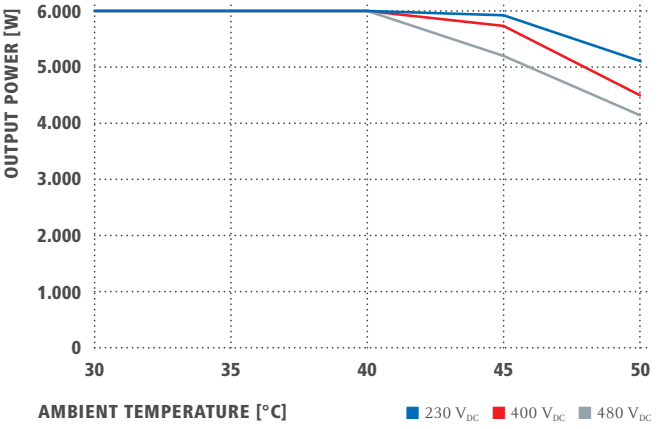


FRONIUS PRIMO GEN24 PLUS 6.0 EFFICIENCY CURVE



FRONIUS PRIMO GEN24 PLUS 6.0 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 5,440 employees worldwide and 1,264 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**

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