Primo GEN24

Fronius Primo GEN24
& GEN24 Plus 3.0 - 6.0 kW

Product advantages

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 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.

2

The Fronius GEN24 is available in two versions:

– As an inverter: Fronius GEN24

integrated backup power function

– As a hybrid inverter: Fronius GEN24 Plus

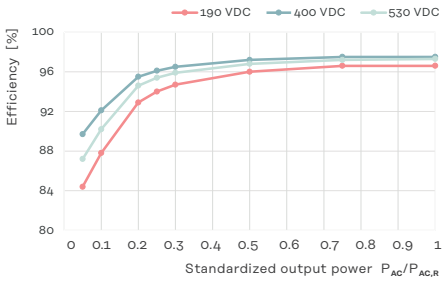
battery connection

two backup power options

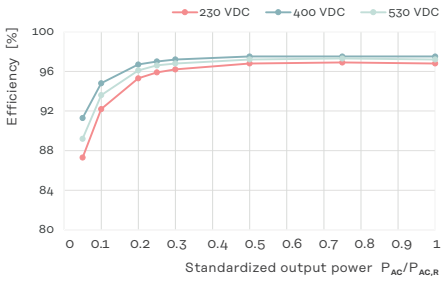
Impressive power data

Efficiency

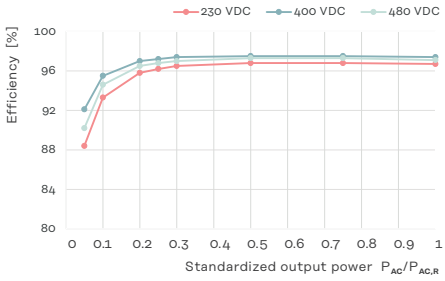
Fronius Primo GEN24 3.0 Plus — Efficiency curve



Fronius Primo GEN24 5.0 Plus — Efficiency curve

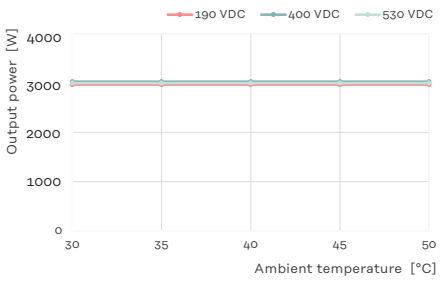


Fronius Primo GEN24 6.0 Plus — Efficiency curve

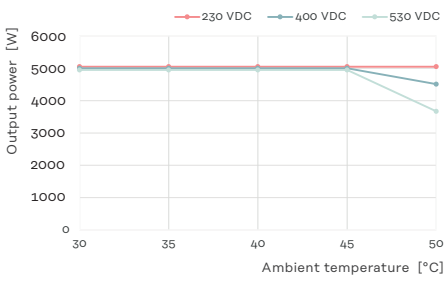


Power derating

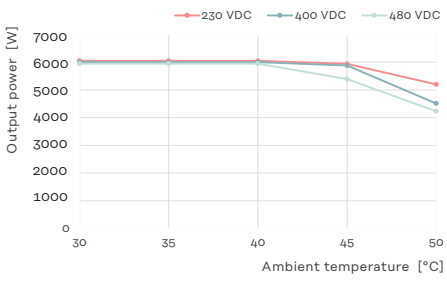
Fronius Primo GEN24 3.0 Plus — Temperature derating



Fronius Primo GEN24 5.0 Plus — Temperature derating



Fronius Primo GEN24 6.0 Plus — Temperature derating



Technical data

3.0/3.6/4.0 kW

			Primo GEN24/GEN24 Plus								
			3.0			3.6			4.0		
Input data	Number of MPP trackers		2			2			2		
	DC input voltage range (Udc min - Udc max)	V	65 - 600			65 - 600			65 - 600		
	Nominal input voltage (Udc,r)	V	400			400			400		
	Feed-in start-up input voltage (Udc start)	V	80			80			80		
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 530		
	MPP voltage range (at rated power) (Umpp min - Umpp max)	V	190 - 530			200 - 530			210 - 530		
			MPPT1	MPPT2		MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current (Idc max)	A	22	12		22	12		22	12	
	Max. array short circuit current (Isc pv) [1]	A	41.25	22		41.25	22		41.25	22	
	Number of DC connections		2	2		2	2		2	2	
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable DC power	W	3,110	3,110	3,110	3,810	3,810	3,810	4,140	4,140	4,140
	Max. PV generator output	Wpeak	3,750	3,110	4,500	4,600	3,810	5,520	5,000	4,140	6,000

Output data	AC rated power (Pac,r)	W	3,000		3,680		4,000	
	Apparent power	VA	3,000		3,680		4,000	
	Max. output power	VA	3,000		3,680		4,000	
			220 Vac	230 Vac	220 Vac	230 Vac	220 Vac	230 Vac
	Nom. AC output current	A	13.6	13	16.7	16	18.2	17.4
	Grid connection (Uac,r)	V	1~ NPE 220/230 (+20%/-30%)					
	Frequency (frequency range fmin - fmax)	Hz	50/60 (45 - 65)					
	Total harmonic distortion	%	< 2		< 2		< 2	
	Power factor (cos φac,r)		0,8 - 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.	< 23	< 23	< 23

Full Backup power and battery function only available with GEN24 Plus

			Primo GEN24 Plus		
			3.0	3.6	4.0
Output data Full Backup [2]	Nom. output power Full Backup	VA	3,000	3,600	4,000
	Grid connection Full Backup	V	1~ NPE 220/230		
	Switching time	sec.	< 35	< 35	< 35

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) [3]	V	150 - 455	150 - 455	150 - 455
	DC battery connection technology		1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm²		
	Max. DC input/output power [4]	W	3,110	3,810	4,140
	Max. charging power for AC coupling [4]	W	3,000	3,680	4,000
	Compatible batteries [5]		Fronius Reserva & BYD Battery-Box Premium HVS/HVM, LG FLEX		

[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 Primo GEN24 3.0–6.0 Plus. Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*

[3] *AC power derating of the inverter occurs with a DC battery input voltage of 419.7 V and higher*

[4] *Depending on connected battery*

[5] *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*

			Primo GEN24/GEN24 Plus		
			3.0	3.6	4.0
General data	Dimensions (height × width × depth)	mm	530 × 474 × 165		
	Weight (inverter/with packaging)	kg	15.4/19	15.4/19	15.4/19
	Protection class		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night consumption	W	< 10	< 10	< 10
	Overvoltage category (DC/AC) [6]		2/3	2/3	2/3
	Inverter concept		Transformerless		
	Cooling		Active Cooling technology		
	Installation		Indoor and outdoor installation		
	Ambient temperature range	°C	-40 to +60	-40 to +60	-40 to +60
	Permissible humidity	%	0 - 100	0 - 100	0 - 100
	Noise emissions	dB (A)	< 42	< 42	< 42
	Max. altitude above sea level	m	4,000	4,000	4,000
	DC connection technology PV		4x DC+ and 4x DC- push-in spring terminals 2.5 - 10 mm²		
	AC connection technology		3-pin AC push-in spring terminals 2.5 - 10 mm² 3-pin backup power push-in spring terminals 1.5 - 10 mm² 2x PE screw terminals 2.5–16 mm² and 3x 2.5 - 10 mm²		
	Certificates and compliance with standards [7]		IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 und 16150, IEC 62116, IEC 61727, G98/G99		
	Backup power functions [8]		PV Point or Full Backup		
	Life cycle analysis		In accordance with ÖNORM EN ISO 14040 and 14044 (checked by employees from Fraunhofer IZM)		
Efficiency	Max. efficiency	%	97.6	97.6	97.6
	Euro. efficiency (ηEU)	%	96.8	97.0	97.1
	MPP adaptation efficiency	%	> 99.9	> 99.9	> 99.9
Protection devices	DC isolation measurement		Integrated		
	Overload performance		Operating point shift, power limiter		
	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		

[6] *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*

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

[8] *Full Backup power and battery function only available with GEN24 Plus*

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

Technical data

4.6/5.0/6.0 kW

			Primo GEN24/GEN24 Plus								
			4.6			5.0			6.0		
Input data	Number of MPP trackers		2			2			2		
	DC input voltage range (Udc min - Udc max)	V	65 - 600			65 - 600			65 - 600		
	Nominal input voltage (Udc,r)	V	400			400			400		
	Feed-in start-up input voltage (Udc start)	V	80			80			80		
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 480		
	MPP voltage range (at rated power) (Umpp min - Umpp max)	V	230 - 530			230 - 530			230 - 480		
			MPPT1	MPPT2		MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current (Idc max)	A	22	12		22	12		22	12	
	Max. array short circuit current (Isc pv) [1]	A	41.25	22		41.25	22		41.25	22	
	Number of DC connections		2	2		2	2		2	2	
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable DC power	W	4,750	4,750	4,750	5,170	5,170	5,170	6,200	5,760	6,200
	Max. PV generator output	Wpeak	5,750	4,750	6,900	6,250	5,170	7,500	7,500	5,760	9,000

Output data	AC rated power (Pac,r)	W	4,600		5,000		6,000	
	Apparent power	VA	4,600		5,000		6,000	
	Max. output power	VA	4,600		5,000		6,000	
			220 Vac	230 Vac	220 Vac	230 Vac	220 Vac	230 Vac
	Nom. AC output current	A	20.9	20	22.7	21.7	27.3	26.1
	Grid connection (Uac,r)	V	1~ NPE 220/230 (+20%/-30%)					
	Frequency (frequency range fmin - fmax)	Hz	50/60 (45 - 65)					
	Total harmonic distortion	%	< 2		< 2		< 2	
	Power factor (cos φac,r)		0,8 - 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.	< 23	< 23	< 23

Full Backup power and battery function only available with GEN24 Plus

			Primo GEN24 Plus		
			4.6	5.0	6.0
Output data Full Backup [2]	Nom. output power Full Backup	VA	4,600	5,000	6,000
	Grid connection Full Backup	V	1~ NPE 220/230		
	Switching time	sec.	< 35	< 35	< 35

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) [3]	V	150 - 455	150 - 455	150 - 455
	DC battery connection technology		1x BATT+ and 1x BATT- push-in spring terminals 2.5 - 10 mm²		
	Max. DC input/output power [4]	W	4,750	5,170	6,200
	Max. charging power for AC coupling4 [4]	W	4,600	5,000	6,000
	Compatible batteries [5]		Fronius Reserva & BYD Battery-Box Premium HVS/HVM, LG FLEX		

[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 Primo GEN24 3.0–6.0 Plus. Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*

[3] *AC power derating of the inverter occurs with a DC battery input voltage of 419.7 V and higher*

[4] *Depending on connected battery*

[5] *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*

			Primo GEN24/GEN24 Plus		
			4.6	5.0	6.0
General data	Dimensions (height × width × depth)	mm	530 × 474 × 165		
	Weight (inverter/with packaging)	kg	15.4/19	15.4/19	15.4/19
	Protection class		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night consumption	W	< 10	< 10	< 10
	Overvoltage category (DC/AC) [6]		2/3	2/3	2/3
	Inverter concept		Transformerless		
	Cooling		Active Cooling technology		
	Installation		Indoor and outdoor installation		
	Ambient temperature range	°C	-40 to +60	-40 to +60	-40 to +60
	Permissible humidity	%	0 - 100	0 - 100	0 - 100
	Noise emissions	dB (A)	< 42	< 42	< 42
	Max. altitude above sea level	m	4,000	4,000	4,000
	DC connection technology PV		4x DC+ and 4x DC- push-in spring terminals 2.5 - 10 mm²		
	AC connection technology		3-pin AC push-in spring terminals 2.5 - 10 mm² 3-pin backup power push-in spring terminals 1.5 - 10 mm² 2x PE screw terminals 2.5–16 mm² and 3x 2.5 - 10 mm²		
	Certificates and compliance with standards [7]		IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 und 16150, IEC 62116, IEC 61727, G98/G99		
	Backup power functions [8]		PV Point or Full Backup		
	Life cycle analysis		In accordance with ÖNORM EN ISO 14040 and 14044 (checked by employees from Fraunhofer IZM)		
Efficiency	Max. efficiency	%	97.6	97.6	97.6
	Euro. efficiency (ηEU)	%	97.2	97.2	97.1
	MPP adaptation efficiency	%	> 99.9	> 99.9	> 99.9
Protection devices	DC isolation measurement		Integrated		
	Overload performance		Operating point shift, power limiter		
	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		

[6] *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*

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

[8] *Full Backup power and battery function only available with GEN24 Plus*

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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 & Backup Switch, you can switch to full backup power operation either automatically or manually. These cost-effective switching components 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 Wattpilot Flex is available in two versions: The Home version is ideal for private households, while the Pro version, with a MIDcompliant meter, enables precise kilowatt-hour billing – perfect for company cars.

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

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