



Designed to empower.



Fronius Primo
GEN24 and
GEN24 Plus

Product Advantages

- 01 Backup Power for Every Situation
- 02 Built-in Freedom
- 03 Versatility as Standard
- 04 Sustainably Future-proof
- 05 Maximum Independence

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 the energy management functions of the Fronius GEN24 and Fronius GEN24 Plus, you 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: With the Fronius UP.storage* software upgrade, the Fronius GEN24 can be retrofitted with 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.

* Available in the Fronius webshop in selected countries.

2

The Fronius GEN24 is
available in two versions:

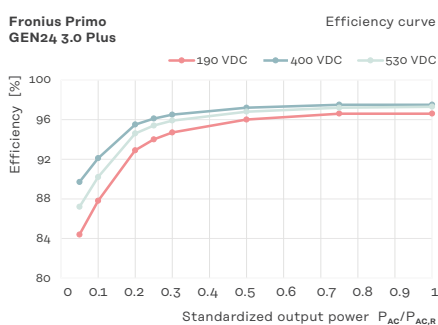
- As an inverter: **Fronius GEN24**
integrated backup power function
- As a hybrid inverter: **Fronius GEN24 Plus**
battery connection
two backup power options

Impressive Power Data

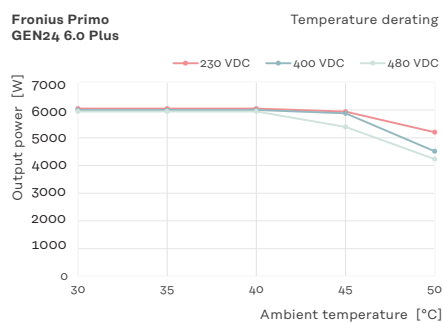
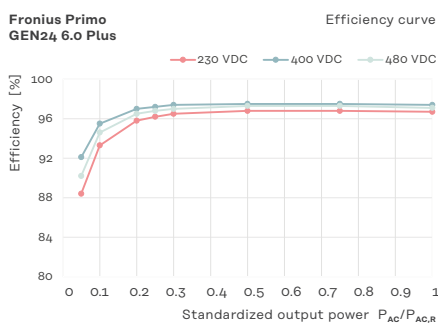
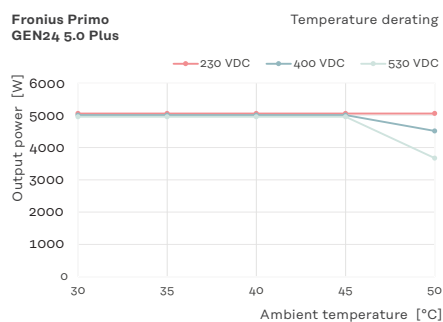
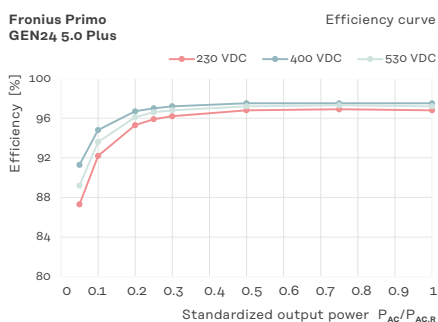
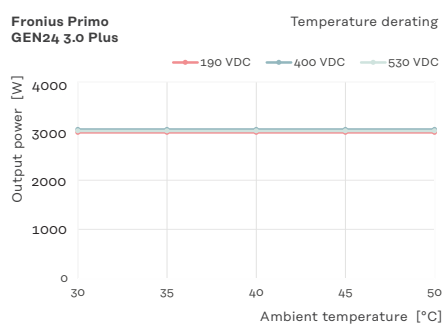
The Fronius GEN24 and Fronius GEN24 Plus impress with premium efficiency and maximum power at high temperatures.



Efficiency



Power 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 (U _{dc} min - U _{dc} max)	V	65 - 600			65 - 600			65 - 600		
	Nominal input voltage (U _{dc,r})	V	400			400			400		
	Feed-in start-up input voltage (U _{dc} start)	V	80			80			80		
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 530		
	MPP voltage range (at rated power) (U _{mpp} min - U _{mpp} max)	V	190 - 530			200 - 530			210 - 530		
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable input current (I _{dc} max)	A	22	12	34	22	12	34	22	12	34
	Max. array short circuit current (I _{sc} pv) ¹	A	36	19	55	36	19	55	36	19	55
	Number of DC connections		2	2	4	2	2	4	2	2	4
	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	W _{peak}	3,750	3,110	4,500	4,600	3,810	5,520	5,000	4,140	6,000

Output data	AC rated power (P _{ac,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	Total	220 Vac	230 Vac	Total	220 Vac	230 Vac	Total
	Nom. AC output current	A	13.6	13	26.6	16.7	16	32.7	18.2	17.4	35.6
	Grid connection (U _{ac,r})	V	1~ NPE 220/230 (+20%/-30%)								
	Frequency (frequency range f _{min} - f _{max})	Hz	50/60 (45 - 65)								
	Total harmonic distortion	%	< 2			< 2			< 2		
Power factor (cos φ _{ac,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 (I _{dc} max)	A	22			22			22		
	DC input voltage range (U _{dc} min - U _{dc} 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 mm ²								
	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		BYD Battery-Box Premium HVS/HVM, LG FLEX ⁶								

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.

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 Depending on the country-specific certification and availability

⁶ Excluding BYD Battery-Box Premium HVS 10.2, HVS 12.8, HVM 8.3, HVM 22.1 & LG FLEX 17.2

			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) ⁷		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 mm ²		
	AC connection technology		3-pin AC push-in spring terminals 2.5 - 10 mm ² 3-pin backup power push-in spring terminals 1.5 - 10 mm ² 2x PE screw terminals 2.5–16 mm ² and 3x 2.5 - 10 mm ²		
Certificates and compliance with standards ⁸		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 ⁹		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 (η _{EU})	%	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 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 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		

⁷ 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

⁸ You can find the current certificates under www.fronius.com/primogen24-plus-cert

⁹ Full Backup power and battery function only available with GEN24 Plus

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 (U _{dc} min - U _{dc} max)	V	65 - 600			65 - 600			65 - 600		
	Nominal input voltage (U _{dc,r})	V	400			400			400		
	Feed-in start-up input voltage (U _{dc} start)	V	80			80			80		
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 480		
	MPP voltage range (at rated power) (U _{mpp} min - U _{mpp} max)	V	230 - 530			230 - 530			230 - 480		
			MPPT1	MPPT2		MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current (I _{dc} max)	A	22	12		22	12		22	12	
	Max. array short circuit current (I _{sc} pv) ¹	A	36	19		36	19		36	19	
	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	W _{peak}	5,750	4,750	6,900	6,250	5,170	7,500	7,500	5,760	9,000	

Output data	AC rated power (P _{ac,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 (U _{ac,r})	V	1~ NPE 220/230 (+20%/-30%)								
	Frequency (frequency range f _{min} - f _{max})	Hz	50/60 (45 - 65)								
	Total harmonic distortion	%	< 2			< 2			< 2		
Power factor (cos φ _{ac,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 (I _{dc} max)	A	22			22			22		
	DC input voltage range (U _{dc} min - U _{dc} 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 mm ²								
	Max. DC input/output power ⁴	W	4,750			5,170			6,200		
	Max. charging power for AC coupling ⁴ ⁴	W	4,600			5,000			6,000		
Compatible batteries ⁵		BYD Battery-Box Premium HVS/HVM, LG FLEX ⁶									

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.

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 Depending on the country-specific certification and availability

⁶ Excluding BYD Battery-Box Premium HVS 10.2, HVS 12.8, HVM 8.3, HVM 22.1 & LG FLEX 17.2

			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) ⁷		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 mm ²		
	AC connection technology		3-pin AC push-in spring terminals 2.5 - 10 mm ² 3-pin backup power push-in spring terminals 1.5 - 10 mm ² 2x PE screw terminals 2.5–16 mm ² and 3x 2.5 - 10 mm ²		
Certificates and compliance with standards ⁸		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 ⁹		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 (η _{EU})	%	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 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 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		

⁷ 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

⁸ You can find the current certificates under www.fronius.com/primogen24-plus-cert

⁹ Full Backup power and battery function only available with GEN24 Plus

Fronius Primo GEN24 and GEN24 Plus



Designed to empower.

For further information, please visit

www.fronius.com/gen24-inverter

Fronius International GmbH

Froniusplatz 1

4600 Wels

Austria

pv-sales@fronius.com

www.fronius.com

Text and illustrations were accurate at the time of printing.
Fronius reserves the right to make changes. All information published in this document, despite exercising the greatest of care in its preparation, is subject to change. No legal liability is accepted. Copyright © 2023 Fronius™. All rights reserved.

EN V01 Sep 2023