Designed to empower.

Fronius Primo GEN24 208-240 & GEN24 208-240 Plus

Product advantages

01 Integrated shade management
02 Backup power for your needs
03 Maximum independence
04 Flexibility for greater potential
05 Built-in longevity

The heart of the photovoltaic system

01 Integrated shade management

Highest yields even in shade: That's what the Fronius GEN24 and Fronius GEN24 Plus achieves with the Dynamic Peak Manager. The intelligent algorithm optimizes PV yields at the string level, eliminating the need for expensive additional module level optimization components.

02 Backup power for your needs

Reliable energy supply: The Fronius GEN24 provides an integrated basic backup power function. "PV Point" is a outlet that supplies connected devices with backup power, as long as the sun is shining.

With the Fronius GEN24 Plus, you can choose between the PV Point and an essential backup option which provides backup power up to the output power of the inverter as long as enough PV production or battery supply power is available.

03 Maximum independence

Sustainable self-sufficiency with 24 hours of sun:
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.

04 Flexibility for greater potential

Thanks to the SuperFlex Design, the Fronius GEN24 and Fronius GEN24 Plus is ideally equipped for complex roof situations. With the ability to align PV modules in different orientations and strings from 3 modules on, your installer has the flexibility to design your solar system tailored to your needs.

05 Built-in longevity

The Active Cooling Technology effectively safeguards the electrical components, protecting them from heat development, therefore extending the service life of your inverter and securing the longevity of your investment.

2

Available in two single phase variants

– **Fronius Primo GEN24*** | 3.8-10 kW
integrated basic backup power PV Point

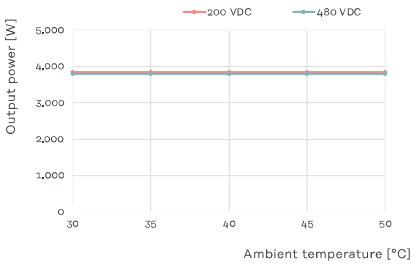
– **Fronius Primo GEN24 Plus** | 3.8-10 kW
two backup power options, battery connection

** The Fronius UP.storage software upgrade gives the Fronius GEN24 storage functionality and opens up another backup power option with the essential backup function. Therefore the GEN24 turns into a GEN24 Plus. Available in the Fronius webshop in selected countries.*

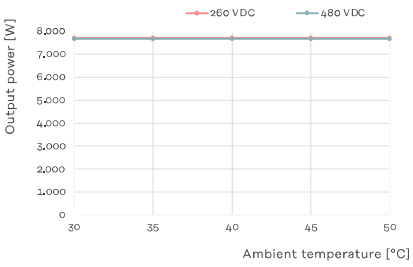
Impressive power data

The Fronius Primo GEN24 208-240 & GEN24 208-240 Plus impresses with maximum power at high temperatures.

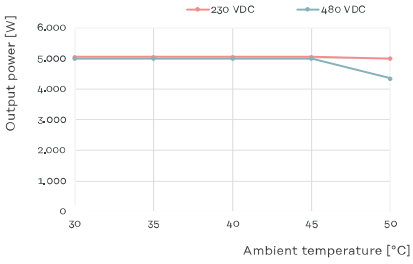
Fronius Primo GEN24 3.8 208-240 [Plus] Temperature derating (240VAC)



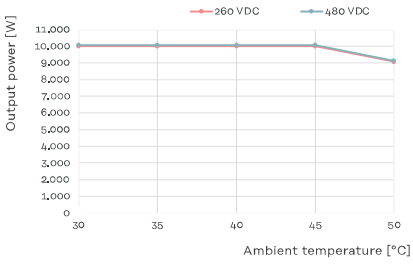
Fronius Primo GEN24 7.7 208-240 [Plus] Temperature derating (240VAC)



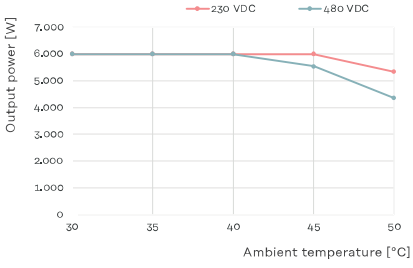
Fronius Primo GEN24 5.0 208-240 [Plus] Temperature derating (240VAC)



Fronius Primo GEN24 10.0 208-240 [Plus] Temperature derating (240VAC)



Fronius Primo GEN24 6.0 208-240 [Plus] Temperature derating (240VAC)



Technical data

3.8/5.0/6.0 kW

			Primo GEN24 208-240 & GEN24 208-240 Plus								
			3.8			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								
			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
	Rated input voltage ($U_{dc,r}$)	V	360	380	400	360	380	400	360	380	400
	Feed-in start 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)	V	200–480			230-480			230-480		
			MPPT1	MPPT2		MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current ($I_{dc\ max}$)	A	22	12		22	12		22	12	
	Max. short circuit current per MPPT ($I_{sc\ pv}$) [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	3,940	3,940	3,940	5,150	5,150	5,150	6,190	5760	6,190
	Max. PV generator output	Wpeak	5,700	5,700	5,700	7,500	6,800	7,500	8,000	6,800	9,000

Output data			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
	AC rated power ($P_{ac,r}$)	W	3,800	3,800	3,800	5,000	5,000	5,000	5,740	6,000	6,000
	Apparent power	VA	3,800	3,800	3,800	5,000	5,000	5,000	5,740	6,000	6,000
	Max. Output power	VA	3,800	3,800	3,800	5,000	5,000	5,000	5,740	6,000	6,000
	Rated AC output current	A	18.3	17.3	15.8	24	22.7	20.8	27.6	27.3	25
	Mains connection ($U_{ac,r}$)	V	1~NPE 208 V / 220 V / 240 V (-12 / +10%)								
	Frequency (frequency range fmin - fmax)	Hz	50 Hz / 60 Hz (45 Hz – 66 Hz)								
	Distortion factor	%	< 3.5								
	Adjustable power factor		0.8 - 1 ind. / cap.								

Output data PV Point			120 V_{ac}
	Rated Output power PV Point	VA	1,560
	Rated AC voltage PV Point	V	1~NPE 120 V / 220 V / 240 V
	Switching time	sec.	~17

The Fronius Primo GEN24 208-240 can be upgraded to a Fronius Primo GEN24 208-240 Plus hybrid inverter through the Fronius UP.storage software upgrade. This upgrade activates battery functionality, enabling the possibility of an essential backup power function. However, external grid switching devices are required for this functionality. The technical specifications for battery operation and essential backup operation are detailed below:

Essential backup power and battery function only available with Fronius Primo GEN24 Plus

			Primo GEN24 208-240 Plus					
			3.8		5.0		6.0	
Output data essential backup [2]			220 V_{ac}	240 V_{ac}	220 V_{ac}	240 V_{ac}	220 V_{ac}	240 V_{ac}
	Rated Output power essential backup	VA	3,800	3,800	5,000	5,000	6,000	6,000
	Mains connection essential backup	V	1~NPE 220 V / 240 V					
	Switching time	sec.	~17					

Battery connection	Number of DC inputs		1		
	Max. Input current (Idc max)	A	22		
	DC input voltage range (Udc min - Udc max)[3]	V	150–455		
	Connection technology DC battery		1x DC+ and 1x DC- spring-type terminals for solid: copper AWG 12-8		
	Max. Charging power with AC coupling [4]	W	3,800	5,000	6,000
	Compatible batteries [5]		BYD Battery-Box Premium HVM US		

[1] *I_{sc} (STC) of the strings multiplied by 1.25 must be less or equal than ISC PV according to NEC 2023. This value needs to be divided by the amount of strings connected to the MPPT.*

[2] *For the essential backup, additional external components are required for grid separation A Fronius solution (Essential Backup Load Unit) will be available in Q2 2025.*

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

[4] *Depending on the connected battery.*

			Primo GEN24 208-240 & GEN24 208-240 Plus		
			3.8	5.0	6.0
General data	Dimensions (height × width × depth)	inch/mm	20.4 x 18.7 x 6.5 / 518 x 474 x 164		
	Weight (inverter)	lbs./kg	35.56 lbs. / 16.13 kg		
	Protection class		NEMA 4X		
	Protection class		1		
	Night consumption	W	<10		
	Overvoltage category (DC/AC) [6]		2/4		
	Cooling		Active Cooling Technology		
	Installation		Indoor and outdoor installation		
	Ambient temperature range	°F/°C	-40 to +140 / -40 to +60		
	Permissible humidity	%	0–100		
	Noise emissions	dB (A)	< 42		
	Max. altitude	ft/m	13,123 / 4,000		
	Connection technology DC PV		2x DC+1, 2x DC+2 and 4x DC- spring-type terminals for solid: copper AWG 14-8		
	Connection technology AC		Spring-type terminals for solid: copper stranded / fine stranded: copper: AWG 14-8 Backup power spring-type terminals: AWG 16-8		
	Certificates and standard compliance		UL 1741 Third Edition (incl. UL1741 Supplement SA and SB), UL 1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30kVA UL1998 (for functions: AFCI, RCMU, PVRSE and isolation monitoring), IEEE 1547:2018 incl. IEEE 1547a:2020, IEEE 1547.1:2020, IEEE 1547:2003 incl. IEEE 1547.1:2005, HECO Rule 14H, California Rule 21, and ISO NE ANSI/IEEE C62.41, FCC Part 15 A & B, CSA C22. 2 No. 107.1-16 (reaffirmed 2021), CSA C22.2 No.290-19, CSA C22.2 No.330-23, CSA C22.3 No.9:20 UL1699B:2024; SunSpec Modbus UL 9540 Ed. 3 (only for Primo GEN24 208-240 Plus) - certification		
	Country of manufacture		Austria		

			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
Efficiency	Max. Efficiency	%	97.4	97.4	97.6	97.4	97.4	97.6	97.4	97.4	97.6
	CEC (ηCEC)	%	96.5	96.5	96.5	97	97	97	97	97	97
	MPP adjustment efficiency	%	> 99.9								

Protective equipment	DC insulation measurement		Integrated
	DC disconnector		Integrated
	Reverse polarity protection		Integrated
	Arc Fault Circuit Interruption (Arc Guard)		Integrated

Interfaces	WLAN / Ethernet LAN		Fronius Solar.web, Modbus TCP, Fronius Solar API (JSON), SunSpec Modbus
	6 digital inputs		Connection to ripple control receiver, energy management
	6 digital inputs/outputs		Integrated
	Emergency shutdown (WSD)		Integrated
	Data logger and web server		Fronius Smart Meter WR / Modbus RTU (third-party)

[6] *According to UL 1741.*

Technical data

7.7/10.0 kW

			Primo GEN24 208-240 & GEN24 208-240 Plus					
			7.7			10.0		
Input data	Number of MPP trackers		2					
	DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)	V	65–600					
			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
	Rated input voltage ($U_{dc,r}$)	V	365	365	385	365	365	385
	Feed-in start voltage ($U_{dc\ start}$)	V	80					
	Usable MPP voltage range	V	65–480			65–480		
	MPP voltage range (at rated power)	V	260–480			260–480		
			MPPT1	MPPT2		MPPT1	MPPT2	
	Max. usable input current ($I_{dc\ max}$)	A	22	22		22	22	
	Max. short circuit current per MPPT ($I_{sc\ pv}$) [1]	A	41.25	36		41.25	36	
	Number of DC connections		2	2		2	2	
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable DC power	W	8,000	8,000	8,000	10,250	10,250	10,250
	Max. PV generator output	Wpeak	11,520	11,520	11,520	13,500	13,000	15,000

Output data			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
	AC rated power ($P_{ac,r}$)	W	7,680	7,680	7,680	9,450	10,000	10,000
	Apparent power	VA	7,680	7,680	7,680	9,450	10,000	10,000
	Max. Output power	VA	7,680	7,680	7,680	9,450	10,000	10,000
	Rated AC output current	A	36.9	34.9	32.0	45.45	45.45	41.7
	Mains connection ($U_{ac,r}$)	V	1~NPE 208 V / 220 V / 240 V (-12 / +10%)					
	Frequency (frequency range fmin - fmax)	Hz	50 Hz / 60 Hz (45 Hz–66 Hz)					
	Distortion factor	%	< 3%					
	Adjustable power factor		0.8–1 ind. / cap.					

Output data PV Point			120 V_{ac}
	Rated Output power PV Point	VA	1,560
	Rated AC voltage PV Point	V	1~NPE 120 V / 220 V / 240 V
	Switching time	sec.	~22

The Fronius Primo GEN24 208-240 can be upgraded to a Fronius Primo GEN24 208-240 Plus hybrid inverter through the Fronius UP.storage software upgrade. This upgrade activates battery functionality, enabling the possibility of an essential backup power function. However, external grid switching devices are required for this functionality. The technical specifications for battery operation and essential backup operation are detailed below:

Essential backup power and battery function only available with Fronius Primo GEN24 Plus

			Primo GEN24 208-240 Plus			
			7.7		10.0	
Output data essential backup [2]			220 V_{ac}	240 V_{ac}	220 V_{ac}	240 V_{ac}
	Rated Output power essential backup	VA	7,680	7,680	10,000	10,000
	Mains connection essential backup	V	1~NPE 220 V / 240 V			
	Switching time	sec.	~17			

Battery connection	Number of DC inputs		1	
	Max. Input current (Idc max)	A	22	
	DC input voltage range (Udc min - Udc max)[3]	V	150–455	
	Connection technology DC battery		1x DC+ and 1x DC- spring-type terminals for solid: copper AWG 12-8	
	Max. Charging power with AC coupling [4]	W	7,680	10,000
	Compatible batteries [5]		BYD Battery-Box Premium HVM US	

[1] *I_{sc} (STC) of the strings multiplied by 1.25 must be less or equal than ISC PV according to NEC 2023. This value needs to be divided by the amount of strings connected to the MPPT.*

[2] *For the essential backup, additional external components are required for grid separation. A Fronius solution (Essential Backup Load Unit) will be available in Q2 2025.*

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

[4] *Depending on the connected battery.*

			Primo GEN24 208-240 & GEN24 208-240 Plus					
			7.7			10.0		
General data	Dimensions (height × width × depth)	inch/mm	23.0 x 20.8 x 7.1 / 583 x 529 x 180					
	Weight (inverter)	lbs./kg	49.05 lbs. / 22.25 kg					
	Protection class		NEMA 4X					
	Protection class		1					
	Night consumption	W	<10					
	Overvoltage category (DC/AC) [6]		2/4					
	Cooling		Active Cooling Technology					
	Installation		Indoor and outdoor installation					
	Ambient temperature range	°F/°C	-40 to +140 / -40 to +60					
	Permissible humidity	%	0–100					
	Noise emissions	dB (A)	< 52					
	Max. altitude	ft/m	13,123 / 4,000					
	Connection technology DC PV		2x DC+1, 2x DC+2 and 4x DC- spring-type terminals for solid: copper stranded / fine stranded: copper AWG 14-8					
	Connection technology AC		Spring-type terminals for solid: copper stranded / fine stranded: copper: AWG 12-6 Backup power spring-type terminals: AWG 16-8					
	Certificates and standard compliance		UL 1741 Third Edition (incl. UL1741 Supplement SA and SB), UL 1741 CRD - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30kVA UL1998 (for functions: AFCI, RCMU, PVRSE and isolation monitoring), IEEE 1547:2018 incl. IEEE 1547a:2020, IEEE 1547.1:2020, IEEE 1547:2003 incl. IEEE 1547.1:2005 ANSI/IEEE C62.41, FCC Part 15 A & B, CSA C22. 2 No. 107.1-16 (reaffirmed 2021), CSA C22.2 No.290-19, CSA C22.2 No.330-23, CSA C22.3 No.9:20 UL1699B:2024; SunSpec Modbus UL 9540 Ed. 3 (only for Primo GEN24 208-240 Plus) - certification					
	Country of manufacture		Austria					
Efficiency			208 V_{ac}	220 V_{ac}	240 V_{ac}	208 V_{ac}	220 V_{ac}	240 V_{ac}
	Max. Efficiency	%	97.2	97.2	97.5	97.2	97.2	97.5
	CEC (ηCEC)	%	96.5	96.5	97	96.5	96.5	97
	MPP adjustment efficiency	%	> 99.9					
Protective equipment	DC insulation measurement		Integrated					
	DC disconnector		Integrated					
	Reverse polarity protection		Integrated					
	Arc Fault Circuit Interruption (Arc Guard)		Integrated					
Interfaces	WLAN / Ethernet LAN		Fronius Solar.web, Modbus TCP, Fronius Solar API (JSON), SunSpec Modbus					
	6 digital inputs		Connection to ripple control receiver, energy management					
	6 digital inputs/outputs		Integrated					
	Emergency shutdown (WSD)		Integrated					
	Data logger and web server		Fronius Smart Meter WR / Modbus RTU (third-party)					

[6] *According to UL 1741.*

Fromius Primo GEN24 208-240 & GEN24 208-240 Plus

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For more information about the product, visit:
www.fronius.us/gen24

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EN V04 Aug 2024