



# Designed to empower.

## Product advantages

- 01 Maximum flexibility
- 02 Backup power for every situation
- 03 Built-in freedom
- 04 Easy to install
- 05 Support & tools

Sustainable, reliable, future-proof: With our Fronius GEN24 inverter as the core of a PV system, you can produce your own energy flexibly and cheaply. The Fronius GEN24 Plus hybrid inverter even enables the connection of a battery storage system so that you can use the solar energy you produce for electricity, heating, cooling and e-mobility. Full solar power for your personal energy revolution with the **Fronius GEN24** and **Fronius GEN24 Plus**. **Designed to empower.**

# The core of the PV system

## 01 Maximum flexibility

With the Fronius GEN24 or Fronius GEN24 Plus as the core of your PV system, you will not only be starting your own energy revolution, you will also gain access to all the possibilities and advantages of solar energy. With "Fronius UP", your PV system becomes even more flexible. A software update turns the Fronius GEN24 into our Fronius GEN24 Plus hybrid inverter.

## 02 Backup power for every situation

Reliable energy supply: The Fronius GEN24 offers with "PV Point" an integrated basic backup power function. With the Fronius GEN24 Plus, you can choose "PV Point" or, with "Full Backup"\*, a backup power supply for the entire household.

## 03 Built-in freedom

The Fronius GEN24 and Fronius GEN24 Plus have open interfaces. This means third-party components can be easily integrated in the system – for a customised PV system.

## 04 Easy to install

Saves time and money: Quick and reliable installation with 180° quick release screws, push-in tension clamp terminals and a well thought-out wall mounting system.

## 05 Support & tools

Endless support: Efficient Fronius solutions are available free of charge to help with planning, installation and system monitoring. This increases customer satisfaction and minimises maintenance expense.

Fronius GEN24 is available in two versions:

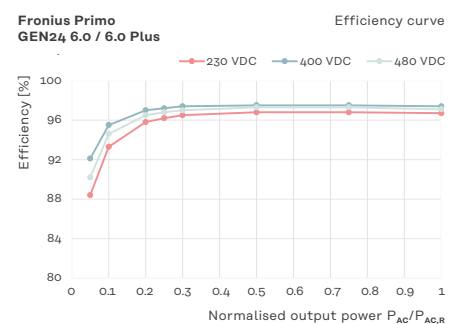
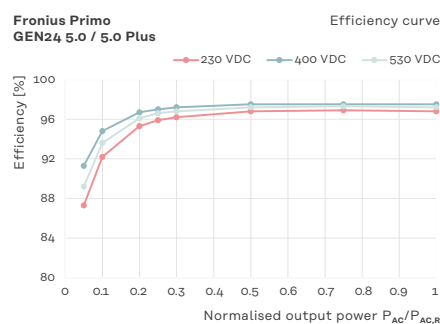
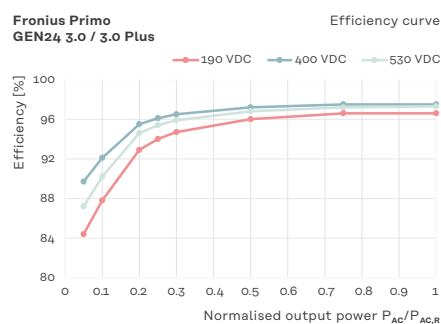
- Inverter: **Fronius GEN24**
- Hybrid inverter: **Fronius GEN24 Plus**



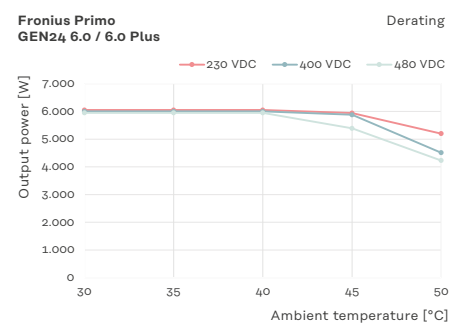
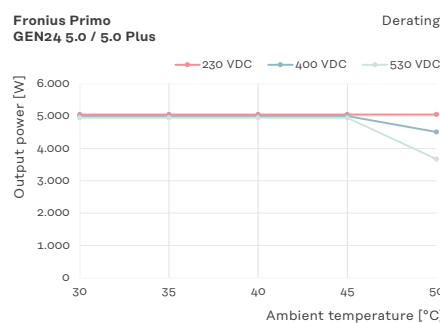
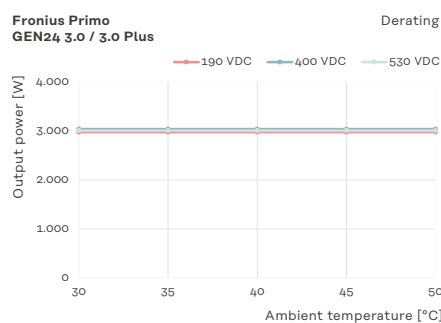
# Impressive performance data

The Fronius GEN24 and Fronius GEN24 Plus stand out thanks to maximum efficiency and maximum output at high temperatures.

## Efficiency



## Power derating



\* Available on the Fronius Primo GEN24 Plus

# 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 (V <sub>DC min</sub> - V <sub>DC max</sub> )	V	65 - 600			65 - 600			65 - 600			
	Nominal input voltage (V <sub>DC,r</sub> )	V	400			400			400			
	Feed-in start voltage (V <sub>DC start</sub> )	V	80			80			80			
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 530			
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	
	Max. usable input current (I <sub>DC max</sub> )	A	22	12	31,10	22	12	3,810	22	12	4,140	
	Max. module array short circuit current (I <sub>SC pv</sub> ) <sup>1</sup>	A	36	19	4,500	36	19	4,600	36	19	6,000	
	Number of DC connections		2		2		2		2		2	
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	
Max. usable DC output	W	3,110	3,110	3,110	3,810	3,810	3,810	4,140	4,140	4,140		
Max. PV generator output	W <sub>peak</sub>	3,750	3,110	4,500	4,600	3,810	5,520	5,000	4,140	6,000		

Output data	AC rated power (P <sub>AC,r</sub> )	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 V AC	230 V AC	Total	220 V AC	230 V AC	Total	220 V AC	230 V AC	Total
	Nominal AC output current (@ 220/230 V)	A	13.6	13	16.7	16.7	16	18.2	18.2	17.4	17.4
	Grid connection (V <sub>AC,r</sub> )	V	1~ EN 220/230 (+20%/-30%)								
	Frequency (frequency range f <sub>min</sub> - f <sub>max</sub> )	Hz	50/60 (45 - 65)								
	Total harmonic distortion	%	< 2			< 2			< 2		
	Power factor (cos φ <sub>AC,r</sub> )		0.8 - 1 ind. / cap.								

Output data PV Point	Nominal output power PV Point	VA	3,000			3,000			3,000		
	PV Point grid connection	V	1~ EN 220/230								
	Switchover time	sec.	< 35			< 35			< 35		

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

			Primo GEN24 Plus								
			3.0			3.6			4.0		
Output data Full Backup <sup>2</sup>	Nominal Full Backup output power	VA	3,000			3,600			4,000		
	Full Backup grid connection	V	1~ EN 220/230								
	Switchover time	sec.	< 20			< 20			< 20		

Battery connection	Number of DC inputs		1			1			1		
	Max. input current (I <sub>DC max</sub> )	A	22			22			22		
	DC input voltage range (U <sub>DC min</sub> - U <sub>DC max</sub> ) <sup>3</sup>	V	150 - 455			150 - 455			150 - 455		
	DC battery connection technology		1× BATT+ and 1× BATT- push-in tension clamp terminals 2.5 - 10 mm <sup>2</sup>								
	Max. DC input/output power <sup>4</sup>	W	3,110			3,810			4,140		
	Max. charging power with AC coupling <sup>4</sup>	W	3,000			3,680			4,000		
	Compatible batteries <sup>5</sup>		BYD Battery-Box Premium HVS/HVM <sup>6</sup>								

<sup>1</sup> I<sub>SC pv</sub> = I<sub>SC max</sub>. ≥ I<sub>SC (STC)</sub> × 1.25 according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

<sup>2</sup> 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.

<sup>3</sup> AC power derating of the inverter occurs with a DC battery input voltage of 419.7 V and higher

<sup>4</sup> Depending on the connected battery

<sup>5</sup> Depending on country-specific certification and availability

<sup>6</sup> Excluding BYD Battery-Box Premium HVS 10.2, HVS 12.8, HVM 8.3, HVM 22.1

			Primo GEN24 / Primo 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
	Degree of protection		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night-time consumption	W	< 10	< 10	< 10
	Overvoltage category (DC/AC) <sup>7</sup>		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	m	4,000	4,000	4,000
	DC PV connection technology		4 × DC+ and 4 × DC- push-in tension clamp terminals 2,5 - 10 mm <sup>2</sup>		
	AC connection technology		3-pin AC push-in tension clamp terminals 2.5 - 10 mm <sup>2</sup> 3-pin backup power push-in tension clamp terminals 1.5 - 10 mm <sup>2</sup> 2 × PE screw terminals 2.5 - 16 mm <sup>2</sup> and 3 × 2.5 - 10 mm <sup>2</sup>		
	Certificates and compliance with standards <sup>8</sup>		IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 und 16150, IEC 62116, IEC 61727, G98/G99, R25		
Backup power functions <sup>9</sup>		PV Point and Full Backup			
Producing country		Austria			
Life Cycle Assessment		According to ÖNORM EN ISO 14040 and 14044 (verified by employees of Fraunhofer IZM)			
Efficiency	Maximum efficiency	%	97.6	97.6	97.6
	European efficiency (η <sub>EU</sub> )	%	96.8	97.0	97.1
	MPP adjustment efficiency	%	> 99.9	> 99.9	> 99.9
Protective devices	DC isolation measurement		Integrated		
	Overload performance		Operating point adjustment, power limitation		
	DC disconnect		Integrated		
	Reverse polarity protection		Integrated		
Interfaces	Wi-Fi / 2 × Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)		
	6 digital inputs 6 digital inputs/outputs		Interface to ripple control receiver, energy management		
	Emergency shutdown (WSD)		Integrated		
	Datalogger and web server		Integrated		
	2 × RS485		Modbus RTU SunSpec (third-party provider) / Fronius Smart Meter, Battery (GEN24 Plus), Fronius Ohmpilot		

<sup>7</sup>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

<sup>8</sup>You can find the current certificates under [www.fronius.com/primo-gen24-plus-cert](http://www.fronius.com/primo-gen24-plus-cert)

<sup>9</sup>Full Backup emergency 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 (V <sub>DC min</sub> - V <sub>DC max</sub> )	V	65 - 600			65 - 600			65 - 600		
	Nominal input voltage (V <sub>DC,r</sub> )	V	400			400			400		
	Feed-in start voltage (V <sub>DC start</sub> )	V	80			80			80		
	Usable MPP voltage range	V	65 - 530			65 - 530			65 - 480		
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
	Max. usable input current (I <sub>DC max</sub> )	A	22	12	22	12	22	12	22	12	22
	Max. module array short circuit current (I <sub>SC pv</sub> ) <sup>1</sup>	A	36	19	36	19	36	19	36	19	36
	Number of DC connections		2			2			2		
			MPPT1	MPPT2	Total	MPPT1	MPPT2	Total	MPPT1	MPPT2	Total
Max. usable DC output	W	4,750	4,750	4,750	5,170	5,170	5,170	6,200	5,760	6,200	
Max. PV generator output	W <sub>peak</sub>	5,750	4,750	6,900	6,250	5,170	7,500	7,500	5,760	9,000	

Output data	AC rated power (P <sub>AC,r</sub> )	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 V AC	230 V AC	Total	220 V AC	230 V AC	Total	220 V AC	230 V AC	Total
	Nominal AC output current (@ 220/230 V)	A	20.9	20	22.7	21.7	27.3	26.1			
	Grid connection (V <sub>AC,r</sub> )	V	1~ EN 220/230 (+20%/-30%)								
	Frequency (frequency range f <sub>min</sub> - f <sub>max</sub> )	Hz	50/60 (45 - 65)								
	Total harmonic distortion	%	< 2			< 2			< 2		
	Power factor (cos φ <sub>AC,r</sub> )		0.8 - 1 ind. / cap.								

Output data PV Point	Nominal output power PV Point	VA	3,000			3,000			3,000		
	PV Point grid connection	V	1~ EN 220/230								
	Switchover time	sec.	< 35			< 35			< 35		

 **Full Backup emergency power and battery function only available with GEN24 Plus**

			Primo GEN24 Plus								
			4.6			5.0			6.0		
Output data Full Backup <sup>2</sup>	Nominal Full Backup output power	VA	4,600			5,000			6,000		
	Full Backup grid connection	V	1~ EN 220/230								
	Switchover time	sec.	< 20			< 20			< 20		

Battery connection	Number of DC inputs		1			1			1		
	Max. input current (I <sub>DC max</sub> )	A	22			22			22		
	DC input voltage range (U <sub>DC min.</sub> - U <sub>DC max.</sub> ) <sup>3</sup>	V	150 - 455			150 - 455			150 - 455		
	DC battery connection technology		1 × BATT+ and 1× BATT- push-in tension clamp terminals 2,5 - 10 mm <sup>2</sup>								
	Max. DC input/output power <sup>4</sup>	W	4,750			5,170			6,200		
	Max. charging power with AC coupling <sup>4</sup>	W	4,600			5,000			6,000		
	Compatible batteries <sup>5</sup>		BYD Battery-Box Premium HVS/HVM <sup>6</sup>								

<sup>1</sup> I<sub>SC pv</sub> = I<sub>SC max.</sub> ≥ I<sub>SC (STC)</sub> × 1.25 according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

<sup>2</sup> 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.

<sup>3</sup> AC power derating of the inverter occurs with a DC battery input voltage of 419.7 V and higher

<sup>4</sup> Depending on the connected battery

<sup>5</sup> Depending on country-specific certification and availability

<sup>6</sup> Excluding BYD Battery-Box Premium HVS 10.2, HVS 12.8, HVM 8.3, HVM 22.1

			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
	Degree of protection		IP 66	IP 66	IP 66
	Safety class		1	1	1
	Night-time consumption	W	<10	<10	<10
	Overvoltage category (DC/AC) <sup>7</sup>		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	m	4,000	4,000	4,000
	DC PV connection technology		4 × DC+ and 4 × DC- push-in tension clamp terminals 2,5 - 10 mm <sup>2</sup>		
	AC connection technology		3-pin AC push-in tension clamp terminals 2.5 - 10 mm <sup>2</sup> 3-pin backup power push-in tension clamp terminals 1.5 - 10 mm <sup>2</sup> 2 × PE screw terminals 2.5 - 16 mm <sup>2</sup> and 3 × 2.5 - 10 mm <sup>2</sup>		
Certificates and compliance with standards <sup>8</sup>		IEC 62109, IEC 62909, AS/NZS 4777.2, CEI 0-21, ABNT BNR 16149 und 16150, IEC 62116, IEC 61727, G98/G99, R25			
Backup power functions <sup>9</sup>		PV Point and Full Backup			
Producing country		Austria			
Life Cycle Assessment		According to ÖNORM EN ISO 14040 and 14044 (verified by employees of Fraunhofer IZM)			
Efficiency	Maximum efficiency	%	97.6	97.6	97.6
	European efficiency (η <sub>EU</sub> )	%	96.8	97.0	97.1
	MPP adjustment efficiency	%	> 99.9	> 99.9	> 99.9
Protective devices	DC isolation measurement		Integrated		
	Overload performance		Operating point adjustment, power limitation		
	DC disconnecter		Integrated		
	Reverse polarity protection		Integrated		
Interfaces	Wi-Fi / 2 × Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)		
	6 digital inputs 6 digital inputs/outputs		Interface to ripple control receiver, energy management		
	Emergency shutdown (WSD)		Integrated		
	Datalogger and web server		Integrated		
	2 × RS485		Modbus RTU SunSpec (third-party provider) / Fronius Smart Meter, Battery (GEN24 Plus), Fronius Ohmpilot		

<sup>7</sup>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

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