

# Designed to transform.



Fronius Verto

## Product advantages

- 01 Total flexibility
- 02 Maximum safety
- 03 Optimal use

# Product advantages

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## **01 Total flexibility**

The Fronius Verto offers maximum flexibility with four high-current MPP trackers and a wide voltage range. This makes the inverter ideally suited to complex system designs and all your individual requirements. What's more, the Fronius Verto uses an integrated Dynamic Peak Manager algorithm that enables users to achieve optimal yields even in shady conditions.

## **02 Maximum safety**

With an integrated surge protection device and an Arc Fault Circuit Interrupter (Fronius Arc Guard), the Fronius Verto guarantees the very highest safety standards even in its basic configuration, without the need to pay for additional components. With Fronius, you can also rest assured that your data is in the best hands. This is ensured by our certified information security system and our servers and cloud storage in Europe.

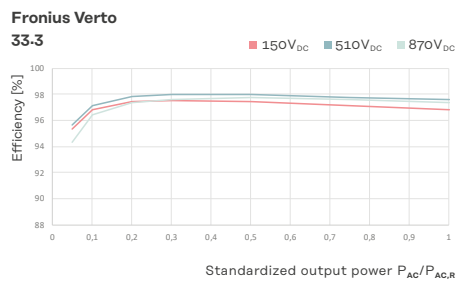
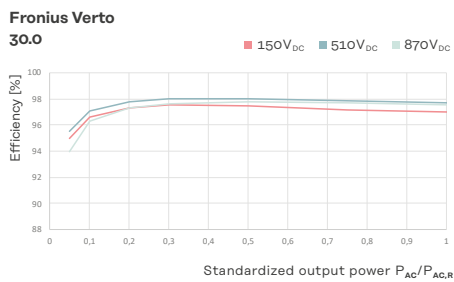
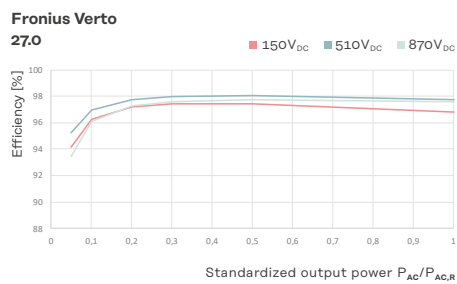
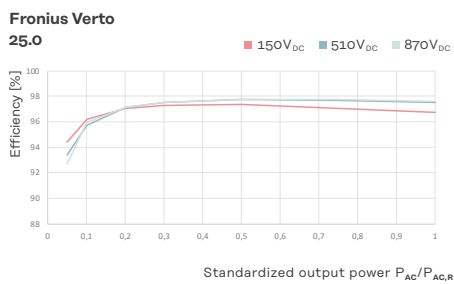
## **03 Optimal use**

Use excess solar energy for other PV applications such as e-mobility or heat, save costs, and ensure faster amortization for your system. Thanks to its open interfaces, the Fronius Verto enables easy integration of consumption regulators, such as the Fronius Ohmpilot or Fronius Wattpilot. A perfect addition to your PV system: Our Fronius EMIL software solution supplies your e-fleet with electricity in a fully automated process across all locations. Heat pumps or smarthome systems are easy to integrate and work well with the Fronius Verto.

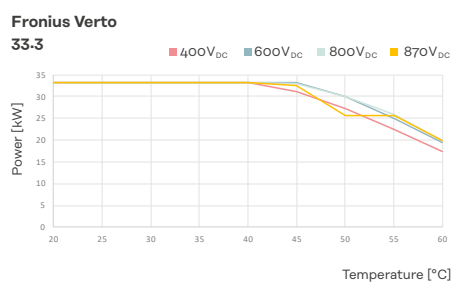
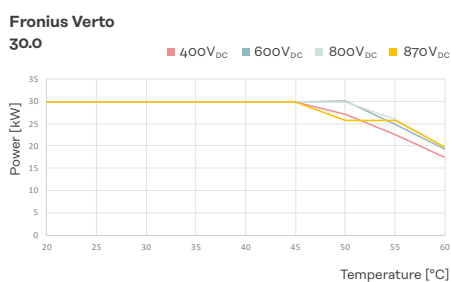
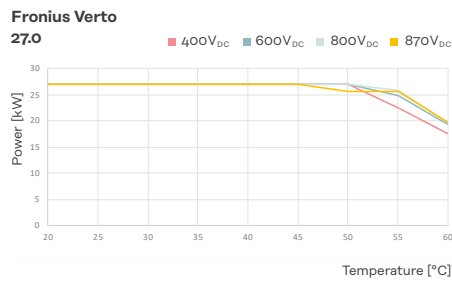
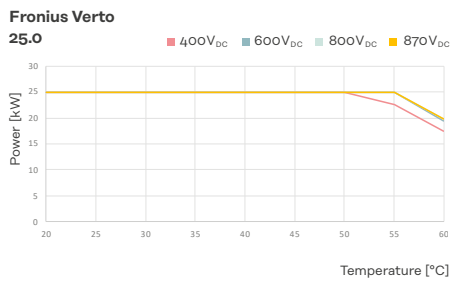


# Fronius Verto

## Efficiency



## Power derating



# Technical data

## Verto 25.0 - 33.3

			Fronius Verto															
			Verto 25.0				Verto 27.0				Verto 30.0				Verto 33.3			
Input data	Number of MPP trackers		4				4				4				4			
	Number of DC connections per MPPT		2				2				2				2			
	Max. usable input current per MPPT ( $I_{dc\ max, MPPT}$ )	A	28				28				28				28			
	Max. usable input current per string ( $I_{dc\ max, string}$ ) <sup>1</sup>	A	28				28				28				28			
	Max. module array short circuit current per MPPT ( $I_{sc\ pv, MPPT}$ ) <sup>2</sup>	A	50				50				50				50			
	Max. module array short circuit current per string ( $I_{sc\ pv, string}$ ) <sup>2</sup>	A	50				50				50				50			
	Max. module array short circuit current—inverter ( $I_{sc\ pv, inverter}$ ) <sup>2</sup>	A	150				150				150				150			
	Nominal input voltage ( $U_{dc,r}$ )	V	600				600				600				600			
	DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )	V	150–1,000				150–1,000				150–1,000				150–1,000			
	Feed-in start-up input voltage ( $U_{dc\ start}$ )	V	150				150				150				150			
	Usable MPP voltage range ( $U_{mpp\ min} - U_{mpp\ max}$ ) <sup>1</sup>	V	150–870				150–870				150–870				150–870			
	MPP voltage range (at rated power) ( $U_{mpp\ min} - U_{mpp\ max}$ )	V	300–870				330–870				360–870				400–870			
	Max. usable DC power—MPPT ( $P_{dc\ max, PV}$ )	W <sub>peak</sub>	13,000				13,000				13,000				13,000			
	Max. PV generator output—MPPT ( $P_{PV\ max}$ )	W <sub>peak</sub>	20,000				20,000				20,000				20,000			
Max. PV generator output—inverter ( $P_{PV\ max}$ )	W <sub>peak</sub>	37,500				40,500				45,000				50,000				

Output data	AC rated power ( $P_{ac,r}$ )	W	25,000				27,000				29,990				33,300			
	Max. output power	VA	25,000				27,000				29,990				33,300			
		$V_{ac}$	380	400	440	480	380	400	440	480	380	400	440	480	380	400	440	480
	AC output current ( $I_{ac,r}$ )	A	37.9	36.2	32.8	30.1	40.9	39.1	35.4	32.5	45.5	43.5	39.4	36.1	50.5	48.3	43.7	40.1
	Mains connection ( $U_{ac,r}$ )	V	3~ (N)PE 380/220; 3~ (N)PE 400/230; 3~ (N)PE 440/254; 3~ (N)PE 480/274				3~ (N)PE 380/220; 3~ (N)PE 400/230; 3~ (N)PE 440/254; 3~ (N)PE 480/275				3~ (N)PE 380/220; 3~ (N)PE 400/230; 3~ (N)PE 440/254; 3~ (N)PE 480/276				3~ (N)PE 380/220; 3~ (N)PE 400/230; 3~ (N)PE 440/254; 3~ (N)PE 480/277			
	Frequency (frequency range $f_{min} - f_{max}$ )	Hz	50/60 (45–65)				50/60 (45–65)				50/60 (45–65)				50/60 (45–65)			
	Total harmonic distortion	%	< 3				< 3				< 1				< 1			
	Power factor ( $\cos \varphi_{ac,r}$ )		0–1 ind./cap.				0–1 ind./cap.				0–1 ind./cap.				0–1 ind./cap.			

<sup>1</sup> A single string is technically capable of processing the full/usable MPPT current. The max. current per MPPT is always limited to 28 A.

<sup>2</sup>  $I_{sc\ pv} = I_{sc\ max} \geq I_{sc\ (STC)} \times 1.25$  according to e.g.: IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

# Technical data

## Verto 25.0 - 33.3

			Fronius Verto			
			Verto 25.0	Verto 27.0	Verto 30.0	Verto 33.3
General data	Dimensions (height × width × depth)	mm	865 x 574 x 278			
	Weight (inverter)	kg	41.75			
	Protection class		IP 66			
	Safety class		1			
	Over-voltage category (DC/AC)		2/3			
	Night consumption	W	< 16			
	Cooling		Active air cooling			
	Installation		Indoor and outdoor installation			
	Ambient temperature range	°C	-40 to +60			
	Permissible humidity	%	0–100			
	Noise emissions	dB (A)	< 54.6			
	Max. altitude above sea level	m	3,000/4,000 (unrestricted/restricted voltage range)			
	Certificates and compliance with standards		IEC62109-1/-2; VDE-AR-N 4105:2018; R25			
Connection technology	AC	Cable cross-section	mm <sup>2</sup>	4–35		
		Conductive material		Al and Cu		
		Cable gland		AC: M32 (Ø12–24.5 mm) Prepared for option 1: M50 cable gland (Ø10–35 mm) Option 2: 1.5" conduit connection PE & data communication: 2 x M32 (3 x Ø 4.9–5.5 mm + 3 x Ø 6.7–8.5 mm)		
	DC	Connection ports		DC direct connection Stäubli Multi Contact MC4		
		Conductive material		Al and Cu		
Efficiency	Max. efficiency	%	97.47	98.03	98.02	97.98
	Europ. efficiency (ηEU)	%	97.36	97.79	97.80	97.76
	MPP adaptation efficiency	%	> 99.9			
Protection devices	DC isolation measurement		Integrated			
	DC disconnecter		Integrated			
	RCMU		Integrated			
	Arc Fault Circuit Interrupter—Arc Guard		Integrated			
	Reverse polarity protection		Integrated			
	DC/AC surge protection device		Type 1+2 or type 2			
Interfaces	WLAN		Fronius Solarweb, Modbus TCP, JSON, 802.11b/g			
	Ethernet LAN RJ45		10/100 Mbit; max. 100 m Fronius Solar.web, Modbus TCP, JSON			
	Wired Shutdown (WSD)		Integrated			
	2 × RS485		Modbus RTU SunSpec (third-party provider)/Fronius Smart Meter			
	6 digital inputs 6 digital inputs/outputs		Connection to ripple control receiver, energy management, load management			
	Datalogger and web server		Integrated			

Fronius Verto. Designed to transform.



# Your photovoltaic system can do more

Fronius Verto, the adaptable inverter for small businesses, agricultural applications, and apartment buildings. Its flexibility makes it the perfect choice, both for constructing a new PV system and expanding an existing one. Featuring integrated safety features and innovative shade management, the Fronius Verto ensures optimum operation. Our flexible inverter facilitates energy sector integration thanks to its open interfaces. This means that it is easy to integrate charging stations such as Fronius Wattlepilot and consumption regulators such as Fronius Ohmpilot.

For more information about the product, visit:

[www.fronius.com/verto-en](http://www.fronius.com/verto-en)

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