



Fronius Verto



Product advantages



01 Total flexibility

The Fronius Verto offers maximum flexibility with up to 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.

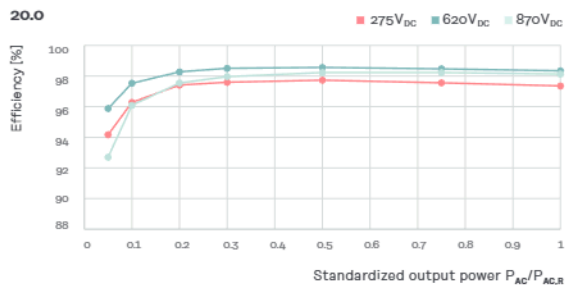
03 Optimal use

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 Flex. 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.

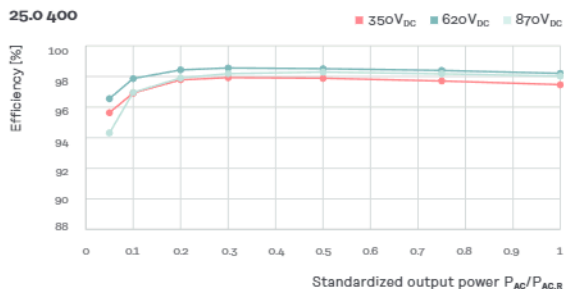
Fronius Verto

Efficiency

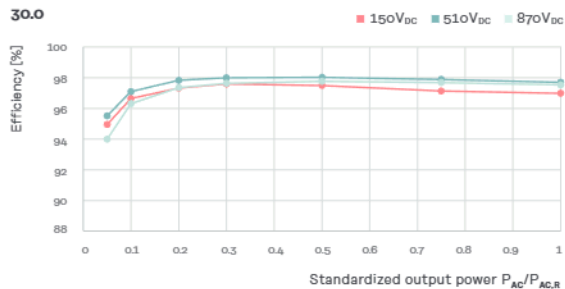
Fronius Verto
20.0



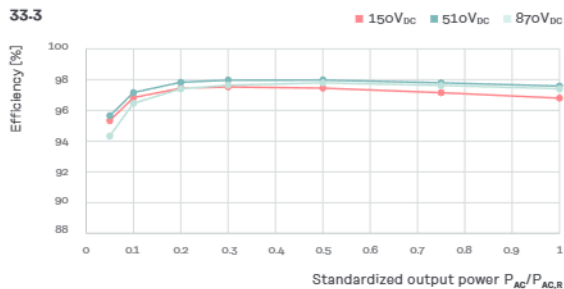
Fronius Verto
25.0 400



Fronius Verto
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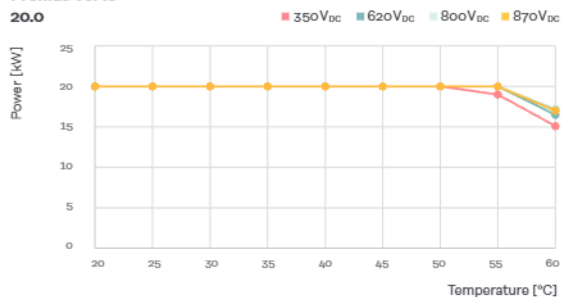


Fronius Verto
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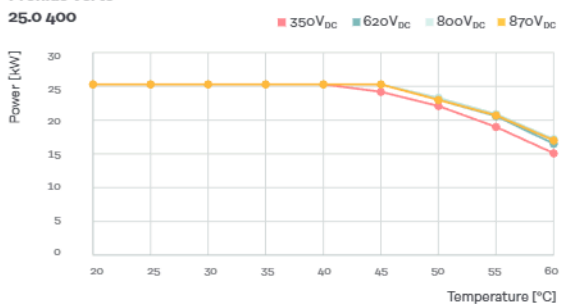


Power derating

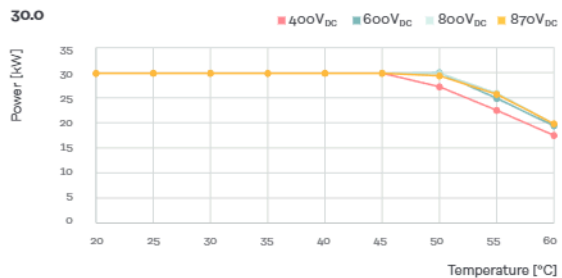
Fronius Verto
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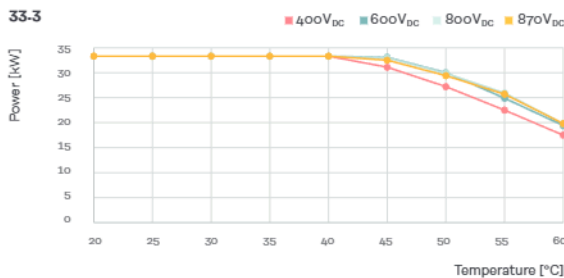
Fronius Verto
25.0 400



Fronius Verto
30.0



Fronius Verto
33.3



Technical data

Verto 15.0 - 25.0 400

			Fronius Verto															
			Verto 15.0				Verto 17.5				Verto 20.0				Verto 25.0 400			
Input data	Number of MPP trackers		3				3				3				3			
	Number of DC connections per MPPT		2 / 1 / 1				2 / 1 / 1				2 / 1 / 1				2 / 1 / 1			
	Max. usable input current per MPPT ($I_{dc\ max,\ MPPT}$)	A	28				28				28				28			
	Max. usable input current per string ($I_{dc\ max,\ string}$) ¹	A	28				28				28				28			
	Max. module array short circuit current - MPPT ($I_{sc\ pv,\ MPPT}$) ²	A	50				50				50				50			
	Max. module array short circuit current - per string ($I_{sc\ pv,\ string}$) ²	A	50				50				50				50			
	Max. module array short circuit current - inverter ($I_{sc\ pv,\ inverter}$) ²	A	100				100				100				100			
	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			
	MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$) ¹	V	150–870				150–870				150–870				150–870			
	MPP voltage range (at rated power) ($U_{mpp\ min} - U_{mpp\ max}$)	V	210–870				245–870				275–870				335–870			
	Max. usable DC output ($P_{dc\ max,\ pv}$)	Wpeak	13,000				13,000				13,000				13,000			
	Max. PV generator output - MPPT ($P_{pv\ max}$)	Wpeak	19,500				19,500				19,500				19,500			
	Max. PV generator output - inverter ($P_{pv\ max}$)	Wpeak	22,500				26,250				30,000				37,500			
Output data	AC rated power ($P_{ac,r}$)	W	15,000				17,500				20,000				25,000			
	Max. output power	VA	15,000				17,500				20,000				25,000			
		V _{AC}	380	400	440	480	380	400	440	480	380	400	440	480	400	440	480	
	Nominal AC output current ($I_{ac,r}$)	A	22.7	21.7	19.7	18.2	26.5	25.4	23.0	21.2	30.3	29.0	26.2	24.2	36.2	32.8	30.1	
	Grid connection ($U_{ac,r}$)	V	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				3~ (N)PE 400/230; 3~ (N)PE 440/254; 3~ (N)PE 480/279			
	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.			

¹ A single String is capable of utilizing full usable MPP current. The current per MPPT is limited to total 28A.

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

			Fronius Verto			
			Verto 15.0	Verto 17.5	Verto 20.0	Verto 25.0 400
General data	Dimensions (height × width × depth)	mm	730 x 540 x 278			
	Weight (inverter)	kg	35.20			
	Degree of protection		IP 66			
	Safety class		1			
	Overvoltage category (DC/AC)		2/3			
	Night-time consumption	W	< 16			
	Cooling		Active Cooling Technology			
	Installation		Indoor and outdoor installation, 90°-10° tilt			
	Ambient temperature range	°C	-40 to +60			
	Permissible humidity	%	0–100			
	Noise emissions	dB (A)	< 56.5			
	Max. altitude	m	3,000/4,000 (unrestricted/restricted voltage range)			
	Certificates and compliance with standards		IEC 62109-1/-2; VDE-AR-N 4105:2018; R25;			
Connection technology	AC	Cable cross-section	4–35			
		Conductor 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 terminals	DC direct connection Stäubli Multi Contact MC4			
		Conductor material	Al and Cu			
Efficiency	Max. efficiency	%	98.53	98.55	98.56	98.56
	Europ. efficiency (η _{EU})	%	98.19	98.29	98.33	98.35
	MPP adaptation efficiency	%	> 99.9			
Protection devices	DC insulation measurement		Integrated			
	DC disconnecter		Integrated			
	RCMU		Integrated			
	Arc fault circuit interrupter (Fronius Arc Guard)		Integrated			
	Reverse polarity protection		Integrated			
	DC surge protection		Type 1+2			
	AC surge protection		Type 2			
Interfaces	WLAN		Fronius Solar.web, Modbus TCP, JSON, 802.11b/g			
	2 x Ethernet LAN RJ45		10/100 Mbit; max. 100 m Fronius Solar.web, Modbus TCP, JSON			
	Wired Shutdown (WSD)		Integrated			
	2 × RS485		Modbus RTU SunSpec / Fronius Smart Meter			
	6 inputs and 6 digital inputs/ outputs		Connection to ripple control receiver, energy management			
	Datalogger and Webserver		Integrated			

Technical data

Verto 27.0 - 33.3

			Fronius Verto											
			Verto 27.0				Verto 30.0				Verto 33.3			
Input data	Number of MPP trackers		4				4				4			
	Number of DC connections per MPPT		2				2				2			
	Max. usable input current per MPPT ($I_{dc\ max,\ MPPT}$)	A	28				28				28			
	Max. usable input current per string ($I_{dc\ max,\ string}$) ¹	A	28				28				28			
	Max. module array short circuit current - MPPT ($I_{sc\ pv,\ MPPT}$) ²	A	50				50				50			
	Max. module array short circuit current - per string ($I_{sc\ pv,\ string}$) ²	A	50				50				50			
	Max. module array short circuit current - inverter ($I_{sc\ pv,\ inverter}$) ²	A	150				150				150			
	Nominal input voltage ($U_{dc,r}$)	V	600				600				600			
	DC input voltage range ($U_{dc\ min} - U_{dc\ max}$)	V	150–1,000				150–1,000				150–1,000			
	Feed-in start-up input voltage ($U_{dc\ start}$)	V	150				150				150			
	MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$) ¹	V	150–870				150–870				150–870			
	MPP voltage range (at rated power) ($U_{mpp\ min} - U_{mpp\ max}$)	V	330–870				360–870				400–870			
	Max. usable DC output ($P_{dc\ max,\ pv}$)	Wpeak	13,000				13,000				13,000			
	Max. PV generator output - MPPT ($P_{pv\ max}$)	Wpeak	20,000				20,000				20,000			
	Max. PV generator output - inverter ($P_{pv\ max}$)	Wpeak	40,500				45,000				50,000			
Output data	AC rated power ($P_{ac,r}$)	W	27,000				29,990				33,300			
	Max. output power	VA	27,000				29,990				33,300			
		V _{AC}	380	400	440	480	380	400	440	480	380	400	440	480
	Nominal AC output current ($I_{ac,r}$)	A	40.9	39.1	35.4	32.5	45.5	43.5	39.4	36.1	50.5	48.3	43.7	40.1
	Grid connection ($U_{ac,r}$)	V	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 480/276				3~ (N)PE 380/220; 3~ (N)PE 400/230 3~ (N)PE 440/254; 3~ (N)PE 480/276			
	Frequency (frequency range $f_{min} - f_{max}$)	Hz	50/60 (45–65)				50/60 (45–65)				50/60 (45–65)			
	Total harmonic distortion	%	< 3				< 1				< 1			
	Power factor ($\cos \varphi_{ac,r}$)		0–1 ind./cap.				0–1 ind./cap.				0–1 ind./cap.			

¹ A single String is capable of utilizing full usable MPP current. The current per MPPT is limited to total 28A.

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

			Fronius Verto		
			Verto 27.0	Verto 30.0	Verto 33.3
General data	Dimensions (height × width × depth)	mm	865 x 574 x 279		
	Weight (inverter)	kg	41.75		
	Degree of protection		IP 66		
	Safety class		1		
	Overvoltage category (DC/AC)		2/3		
	Night-time consumption	W	< 16		
	Cooling		Active Cooling Technology		
	Installation		Indoor and outdoor installation, 90°-10° tilt		
	Ambient temperature range	°C	-40 to +60		
	Permissible humidity	%	0–100		
	Noise emissions	dB (A)	< 54.6		
	Max. altitude	m	3,000/4,000 (unrestricted/restricted voltage range)		
	Certificates and compliance with standards		IEC 62109-1/-2; VDE-AR-N 4105:2018; R25; EN 50549-1/-2; CEI 0-16; CEI 0-21; UNE 217002:2020; IEC 62116; IEC 61727; AS/NZS 4777.2:2020+A1; IEC63027:2023;		
Connection technology	AC	Cable cross-section	4–35		
		Conductor 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 terminals	DC direct connection Stäubli Multi Contact MC4		
		Conductor material	Al and Cu		
Efficiency	Max. efficiency	%	98.03	98.02	97.98
	Europ. efficiency (η _{EU})	%	97.79	97.80	97.76
	MPP adaptation efficiency	%	> 99.9		
Protection devices	DC insulation measurement		Integrated		
	DC disconnect		Integrated		
	RCMU		Integrated		
	Arc fault circuit interrupter (Fronius Arc Guard)		Integrated		
	Reverse polarity protection		Integrated		
	DC surge protection		Type 1+2 or Type 2		
	AC surge protection		Type 1+2 or Type 2		
Interfaces	WLAN		Fronius Solar.web, Modbus TCP, JSON, 802.11b/g		
	2 x Ethernet LAN RJ45		10/100 Mbit; max. 100 m Fronius Solar.web, Modbus TCP, JSON		
	Wired Shutdown (WSD)		Integrated		
	2 × RS485		Modbus RTU SunSpec / Fronius Smart Meter		
	6 inputs and 6 digital inputs/ outputs		Connection to ripple control receiver, energy management		
	Datalogger and Webserver		Integrated		



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 Wattpilot Flex and consumption regulators such as Fronius Ohmpilot.

For more information about the product, visit:

www.fronius.com/verto-en

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