Fronius
Verto
Plus

Verto Plus

Product advantages

01 Full Backup Capability

When combined with a battery storage system, the Fronius Verto Plus provides a powerful, fully-flinched three-phase emergency power supply for the entire building. It is capable of handling even large loads such as heat pumps, cooling systems, fans or grinders. This makes the Fronius Verto Plus a reliable and safe solution for securing the power supply even in critical situations.

02 Total flexibility

The Fronius Verto Plus offers maximum flexibility with three 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 Plus uses an integrated Dynamic Peak Manager algorithm that enables users to achieve optimal yields even in shady conditions.

03 Maximum safety

With an integrated surge protection device and an Arc Fault Circuit Interrupter (Fronius Arc Guard), the Fronius Verto Plus 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.

Technical data

Verto Plus 15.0 - 20.0

		Fronius Verto Plus		
Input data		**Verto Plus 15.0**	**Verto Plus 17.5**	**Verto Plus 20.0**
Number of MPP trackers		3	3	3
Inputs Per MPPT / Number of DC connection 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
Usable MPP voltage range ($U_{mpp\,min}$ - $U_{mpp\,max}$)	V	150–870	150–870	150–870
MPP voltage range (full power) ($U_{mpp\,min}$ - $U_{mpp\,max}$)	V	180–870	210–870	240–870
Max. usable DC power - MPPT	W	13,000	13,000	13,000
Max. usable DC power - Inverter [3]	W	22,500	26,250	30,000
Max. PV generator output - MPPT	Wpeak	20,000	20,000	20,000
Max. PV generator output - Inverter	Wpeak	22,500	26,250	30,000

Output data							
AC rated power ($P_{ac,r}$)	W	15,000		17,500		20,000	
Max. output power / rated apparent power	VA	15,000		17,500		20,000	
	V_{AC}	380	400	380	400	380	400
Nominal AC output current ($I_{ac,\,r}$)	A	22.7	21.7	26.5	25.4	30.3	29.0
Grid connection (voltage range)	V	3~ (N)PE 380/220; 3~ (N)PE 400/230;		3~ (N)PE 380/220; 3~ (N)PE 400/230;		3~ (N)PE 380/220; 3~ (N)PE 400/230;	
Frequency (frequency range)	Hz	50/60 (45–65)		50/60 (45–65)		50/60 (45–65)	
Total harmonic distortion	%	tbd		tbd		tbd	
Power factor (cos $\varphi_{ac,r}$)		0–1 ind./cap.		0–1 ind./cap.		0–1 ind./cap.	

preliminary data

[1] *Individual string is technically capable to handle full / usable MPPT current. However Max. Current per MPPT is limited to 28A.*
[2] *Isc pv = Isc max ≥ Isc (STC) x 1.25 according e.g.: IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.*
[3] *Max power that can be utilized in parallel for output power (AC) and battery charging power (DC).*

Technical data

Verto Plus 15.0 - 20.0

		Fronius Verto Plus					
		Verto Plus 15.0		**Verto Plus 17.5**		**Verto Plus 20.0**	
Output data Full Backup [3]							
Nominal Full Backup output power	VA	15,000		17,500		20,000	
Peak output power [4]	VA	30,000		30,000		30,000	
Nominal Full Backup phase power	VA	7,000	7,300	7,000	7,300	7,000	7,300
Grid connection Full Backup	V	380 VAC	400 VAC	380 VAC	400 VAC	380 VAC	400 VAC
Switching time	sec.	~11		~11		~11	

Battery connection				
Number of DC inputs		1	1	1
Max. nominal dis-/charging current ($I_{dc\ max}$)	A	50	50	50
DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)	V	150–700	150–700	150–700
DC battery connection technology		DC-connectors Stäubli MC4 Evo Stor	DC-connectors Stäubli MC4 Evo Stor	DC-connectors Stäubli MC4 Evo Stor
Max. charging power [5]	W	22,500	26,250	30,000
Max. discharging power [5]	W	15,000	17,500	20,000
Max. charging power for AC coupling [5]	W	15,000	17,500	20,000
Compatible batteries [6]		Fronius Reserva, BYD Battery-Box Premium HVM, HVS [6]		

General data		
Dimensions (height x width x depth)	mm	865 x 574 x 279
Weight (Inverter)	kg	43
Degree of protection		IP66
Protection class		1
Overvoltage category (DC / AC) [7]		2/3
Night time consumption	W	< 16
Cooling		Regulated air cooling
Installation		Indoor and outdoor installation, 90° - 10° tilt
Ambient temperature range	°C	-25 to +60
Permitted humidity	%	0–100
Max. Altitude (unrestricted / restricted voltage range)	m	3,000 / 4,000
DC connection technology		DC-connectors Stäubli Multi Contact MC4
AC connection technology		Cable cross section: 4 - 35 mm² (Al & Cu) Cable gland: M32 (Ø12-24.5 mm) Prepared for option 1: M50 Cable gland (Ø10-35 mm) Option 2: 1.5" conduit connection
Certificates and compliance with standards		IEC 62109-1/-2; VDE-AR-N 4105:2018; R25;
Producing country		Austria

Efficiency				
Max. efficiency	%	t.b.d.	t.b.d.	t.b.d.
Europ. efficiency (ηEU)	%	t.b.d.	t.b.d.	t.b.d.
MPP adaptation efficiency	%	>99.9	>99.9	>99.9

[3] *Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*

[4] *Sufficient PV and battery power required. Duration max. 10s, 400 VAC symmetric, depending on environmental conditions.*

[5] *Depending on current and voltage of connected battery.*

[6] *Excluding BYD Battery-Box Premium HVM 8.3 and 3xHVM 22.1. When combining multiple BYD battery towers current ratings need to be considered..*

[7] *According to IEC 62109-1. DIN rail for optional type 1 + 2 or type 2 surge protection device available. Further information regarding the availability of the inverters in your country can be found at www.fronius.com.*

		Fronius Verto Plus		
		Verto Plus 15.0	**Verto Plus 17.5**	**Verto Plus 20.0**
Protective Devices	AFCI - Arc Fault Detection (Arc Guard)		Yes	
	DC insulation measurement		Yes	
	Overload behaviour		Operating point adjustment. Power limitation	
	DC disconnector		Yes	
	Reverse polarity protection		Yes	
	RCMU		Yes	
	DC/AC overvoltage protection		DC Type 1+2 (IEC 61643-31) / AC Type 2 (IEC 61643-11)	

Interfaces	WLAN		Fronius Solar.web, Modbus TCP SunSpec, JSON, 802.11b/g	
	Ethernet LAN RJ45		10/100Mbit; max. 100m, Fronius Solar.web, Modbus TCP SunSpec, JSON	
	Wired Shutdown (WSD)		Integrated	
	2 x RS485		Modbus RTU SunSpec (3rd party) / Fronius Smart Meter / Battery	
	6 digital inputs 6 digital in-/outputs		Connection to ripple control receiver, energy management, load management	
	Datalogger & Webserver		Integrated	

Technical data
Verto Plus 25.0 - 33.0

			Fronius Verto Plus		
			Verto Plus 25.0	**Verto Plus 30.0**	**Verto Plus 33.0**
Input data	Number of MPP trackers		3	3	3
	Inputs Per MPPT / Number of DC connection 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
	Usable MPP voltage range ($U_{mpp\,min}$ - $U_{mpp\,max}$)	V	150–870	150–870	150–870
	MPP voltage range (full power) ($U_{mpp\,min}$ - $U_{mpp\,max}$)	V	300–870	360–870	410–870
	Max. usable DC power - MPPT	W	13,000	13,000	13,000
	Max. usable DC power - Inverter [3]	W	33,250	39,000	39,000
	Max. PV generator output - MPPT	Wpeak	20,000	20,000	20,000
	Max. PV generator output - Inverter	Wpeak	37,500	45,000	50,000

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[2] *Isc pv = Isc max ≥ Isc (STC) x 1.25 according e.g.: IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.*
[3] *Max power that can be utilized in parallel for output power (AC) and battery charging power (DC).*

Technical data

Verto Plus 25.0 - 33.0

			Fronius Verto Plus				
			Verto Plus 25.0		**Verto Plus 30.0**		**Verto Plus 33.0**
Output data	AC rated power ($P_{ac,r}$)	W	25,000		29,990		33,300
	Max. output power / rated apparent power	VA	25,000		29,990		33,300
		V_{AC}	380	400	380	400	380	400
	Nominal AC output current ($I_{ac,r}$)	A	37.90	36.2	45.4	43.5	50.5	48.3
	Grid connection (voltage range)	V	3~ (N)PE 380/220; 3~ (N)PE 400/230;		3~ (N)PE 380/220; 3~ (N)PE 400/230;		3~ (N)PE 380/220; 3~ (N)PE 400/230;
	Frequency (frequency range	Hz	50/60 (45–65)		50/60 (45–65)		50/60 (45–65)
	Total harmonic distortion	%	tbd		tbd		tbd
	Power factor ($\cos \varphi_{ac,r}$)		0–1 ind./cap.		0–1 ind./cap.		0–1 ind./cap.

Output data Full Backup [3]	Nominal Full Backup output power	VA	25,000		29,990		33,300
	Peak output power [4]	VA	50,000		50,000		50,000
	Nominal Full Backup phase power	VA	11,100	11,100	11,100	11,100	11,100	11,100
	Grid connection Full Backup	V	380 VAC	400 VAC	380 VAC	400 VAC	380 VAC	400 VAC
	Switching time	sec.	~11		~11		~11

Battery connection	Number of DC inputs		1		1		1
	Max. nominal dis-/charging current ($I_{dc\ max}$)	A	50		50		50
	DC input voltage range ($U_{dc\ min}$ - $U_{dc\ max}$)	V	150–700		150–700		150–700
	DC battery connection technology		DC-connectors Stäubli MC4 Evo Stor		DC-connectors Stäubli MC4 Evo Stor		DC-connectors Stäubli MC4 Evo Stor
	Max. charging power [5]	W	33,250		39,000		39,000
	Max. discharging power [5]	W	25,000		29,990		33,300
	Max. charging power for AC coupling [5]	W	25,000		29,990		33,300
	Compatible batteries [6]		Fronius Reserva, BYD Battery-Box Premium HVM, HVS [6]				

preliminary data

[3] *Additional external components for grid switchover are required for the Full Backup. See the Operating Instructions for further details.*
[4] *Sufficient PV and battery power required. Duration max. 10s, 400 VAC symmetric, depending on environmental conditions.*
[5] *Depending on current and voltage of connected battery.*
[6] *Excluding BYD Battery-Box Premium HVM 8.3 and 3xHVM 22.1. When combining multiple BYD battery towers current ratings need to be considered.*

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General data	Dimensions (height x width x depth)	mm	865 x 574 x 279		
	Weight (Inverter)	kg	43		
	Degree of protection		IP66		
	Protection class		1		
	Overvoltage category (DC / AC) [7]		2/3		
	Night time consumption	W	< 16		
	Cooling		Regulated air cooling		
	Installation		Indoor and outdoor installation, 90° - 10° tilt		
	Ambient temperature range	°C	-25 to +60		
	Permitted humidity	%	0—100		
	Max. Altitude (unrestricted / restricted voltage range)	m	3,000 / 4,000		
	DC connection technology		DC-connectors Stäubli Multi Contact MC4		
	AC connection technology		Cable cross section: 4 - 35 mm² (Al & Cu) Cable gland: M32 (Ø12-24.5 mm) Prepared for option 1: M50 Cable gland (Ø10-35 mm) Option 2: 1.5" conduit connection		
	Certificates and compliance with standards		IEC 62109-1/-2; VDE-AR-N 4105:2018; R25;		
	Producing country		Austria		

Efficiency	Max. efficiency	%	t.b.d.	t.b.d.	t.b.d.
	Europ. efficiency (ηEU)	%	t.b.d.	t.b.d.	t.b.d.
	MPP adaptation efficiency	%	>99.9	>99.9	>99.9

Protective Devices	AFCI - Arc Fault Detection (Arc Guard)		Yes		
	DC insulation measurement		Yes		
	Overload behaviour		Operating point adjustment. Power limitation		
	DC disconnector		Yes		
	Reverse polarity protection		Yes		
	RCMU		Yes		
	DC/AC overvoltage protection		DC Type 1+2 (IEC 61643-31) / AC Type 2 (IEC 61643-11)		

Interfaces	WLAN		Fronius Solar.web, Modbus TCP SunSpec, JSON, 802.11b/g		
	Ethernet LAN RJ45		10/100Mbit; max. 100m, Fronius Solar.web, Modbus TCP SunSpec, JSON		
	Wired Shutdown (WSD)		Integrated		
	2 x RS485		Modbus RTU SunSpec (3rd party) / Fronius Smart Meter / Battery		
	6 digital inputs 6 digital in-/outputs		Connection to ripple control receiver, energy management, load management		
	Datalogger & Webserver		Integrated		

[7] *According to IEC 62109-1. DIN rail for optional type 1 + 2 or type 2 surge protection device available. Further information regarding the availability of the inverters in your country can be found at www.fronius.com.*

Your photovoltaic system can do more

Fronius Verto Plus, the adaptable hybrid 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 Plus 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:
fronius.com/verto-plus-en

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