



# Fronius GEN24 Hybrid Inverter



# FRONIUS PRIMO GEN24 PLUS

## 1-PHASE HYBRID INVERTER

### Fronius Primo GEN24 Plus

1-phase	2 MPPT: 22 A/ 12 A
3 - 6 kW	1 battery: 22 A





# FRONIUS SYMO GEN24 PLUS

## 3-PHASE HYBRID INVERTER

### Fronius Symo GEN24 Plus

3-phase

2 MPPT: 25 A/ 12,5 A

6 - 10 kW

1 battery: 22 A





# FRONIUS HYBRID INVERTERS (3-PHASE)

## Symo Hybrid | 3-5 kW

- / Power Classes: 3 | 4 | 5 kW
- / MPP-Tracker: 1 (16 A)
- / MPP voltage range: 150 - 800 V
- / Battery Input: 1 (16 A)
- / Compatible batteries:
  - / BYD Premium HVM
  - / LG Chem RESU 7H, 10H

- / Backup options:
  - / Full Backup:
  - / PV Point:

## GEN24 Plus | 3-5 kW

- / Power Classes: 3 | 4 | 5 kW
- / MPP-Tracker: 2 (12,5 / 12,5 A)
- / MPP voltage range: 80 - 800 V
- / Battery Input: 1 (12,5 A)
- / Compatible batteries:
  - / BYD Premium HVS & HVM

- / Backup options:
  - / Full Backup:
  - / PV Point:

## GEN24 Plus | 6-10 kW

- / Power Classes: 6 | 8 | 10 kW
- / MPP-Tracker: 2 (25 / 12,5 A)
- / MPP voltage range: 80 - 800 V
- / Battery Input: 1 (22 A)
- / Compatible batteries:
  - / BYD Premium HVS & HVM

- / Backup options:
  - / Full Backup:
  - / PV Point:



# FRONIUS GEN24 PLUS FOR EFFICIENT ENERGY MANAGEMENT

**Energy flow management**

**Fronius Smart meter**

**“Load profile“analysis**

**Energy management**

**Maximum self-consumption**





# FRONIUS GEN24 PLUS FOR SYSTEM WITH/WITHOUT BATTERY

**Ready for battery**

Increase your own consumption

Easy retrofitting

BYD Battery-Box Premium HVS / HVM

Affordable solution



FRONIUS & BYD- THE PERFECT STORAGE SOLUTION

# GEN24 PLUS HYBRID SOLUTION



## BYD BATTERY-BOX PREMIUM HVS/HVM

### Secure.

- / Lithium iron phosphate (LiFePO4)

### Modular.

- / HVS: 5.1-10.2 kWh, 2-4 modules
- / HVM: 11 - 22.1 kWh, 4-8 modules

### Expansion


2.6 kWh (HVS) or 2.8 kWh (HVM) steps

### Easy installation.

- / To be placed on the floor
- / Easy setup



# COMBINATIONS MATRIX

				
<b>BYD Battery-Box HV</b>				
H 5.1		-	-	-
H 6.4		✓	-	-
H 7.7		✓	-	-
H 9.0		✓	-	-
H 10.2		✓	-	-
H 11.5		✓	-	-
<b>BYD Battery-Box Premium HVS</b>				
HVS 5.1		-	✓	✓
HVS 7.7		-	✓	✓
HVS 10.2		-	-	✓
HVS 12.8		-	-	-
<b>BYD Battery-Box Premium HVM</b>				
HVM 8.3		✓	-	-
HVM 11.0		✓	✓	✓
HVM 13.8		✓	✓	✓
HVM 16.6		✓	✓	✓
HVM 19.3		✓	✓	✓
HVM 22.1		✓	-	✓



## COMPATIBILITIES AND MAXIMUM CHARGING AND DISCHARGING POWER

BYD BATTERY-BOX PREMIUM*	HVS 5.1	HVS 7.7	HVS 10.2	HVM 8.3	HVM 11.0	HVM 13.8	HVM 16.6	HVM 19.3	HVM 22.1
Usable capacity of the battery [kWh]	5.1	7.7	10.2	8.3	11.0	13.8	16.6	19.3	22.1
Nominal voltage of the battery [V]	204	307	409	153	204	256	307	358	409
Battery operating voltage [V]	160 - 240	240 - 360	320 - 480	120 - 180	160 - 240	200 - 300	240 - 360	280 - 420	320 - 480
Max. charge/discharge current Primo/Symo GEN24 Plus [A]	22								

\*Values according to BYD.

MAXIMUM CHARGING AND DISCHARGING POWER WITH GEN24 PLUS (KW)	HVS 5.1	HVS 7.7	HVS 10.2	HVM 8.3	HVM 11.0	HVM 13.8	HVM 16.6	HVM 19.3	HVM 22.1
Primo GEN24 3.0 Plus	3.2	3.2	-	-	3.2	3.2	3.2	3.2	-
Primo GEN24 3.6 Plus	3.9	3.9	-	-	3.9	3.9	3.9	3.9	-
Primo GEN24 4.0 Plus	4.2	4.2	-	-	4.2	4.2	4.2	4.2	-
Primo GEN24 4.6 Plus	4.5	4.9	-	-	4.5	4.9	4.9	4.9	-
Primo GEN24 5.0 Plus	4.5	5.3	-	-	4.5	5.3	5.3	5.3	-
Primo GEN24 6.0 Plus	4.5	6.3	-	-	4.5	5.6	6.3	6.3	-
Symo GEN24 6.0 Plus	4.5	6.3	6.3	-	4.5	5.6	6.3	6.3	6.3
Symo GEN24 8.0 Plus	4.5	6.8	8.3	-	4.5	5.6	6.8	7.9	8.3
Symo GEN24 10.0 Plus	4.5	6.8	9.0	-	4.5	5.6	6.8	7.9	9.0



# CHARGING-/DISCHARGING POWER

## Limiting factors

- / Symo GEN24 3.0-5.0 battery input: **12,5 A**
- / Battery voltage per module: **102,4 V (HVS) / 51,2 V (HVM)**

	HVS 5.1	HVS 7.7	HVS 10.2	HVM 11.0	HVM 13.8	HVM 16.6	HVM 19.3	HVM 22.1
Number of modules	2	3	4	4	5	6	7	8
Symo GEN24 3.0 Plus	2,56	3,13	3,13	2,56	3,13	3,13	3,13	3,13
Symo GEN24 4.0 Plus	2,56	3,84	4,17	2,56	3,20	3,84	4,17	4,17
Symo GEN24 5.0 Plus	2,56	3,86	5,12	2,56	3,20	3,84	4,48	5,12



# SYSTEM PERFORMANCE INDEX (SPI)

- / Storage inspection 2020 (HTW Berlin)
- / Highest efficiency
- / Fronius & BYD

97,3%



Wechselrichterwirkungsgrad

94%



System Performance Index (10 kwp)

Inverter efficiency:

97,3%

Overall efficiency:

94%

• **Highest efficiency: The combination Symo GEN24 Plus and BYD**

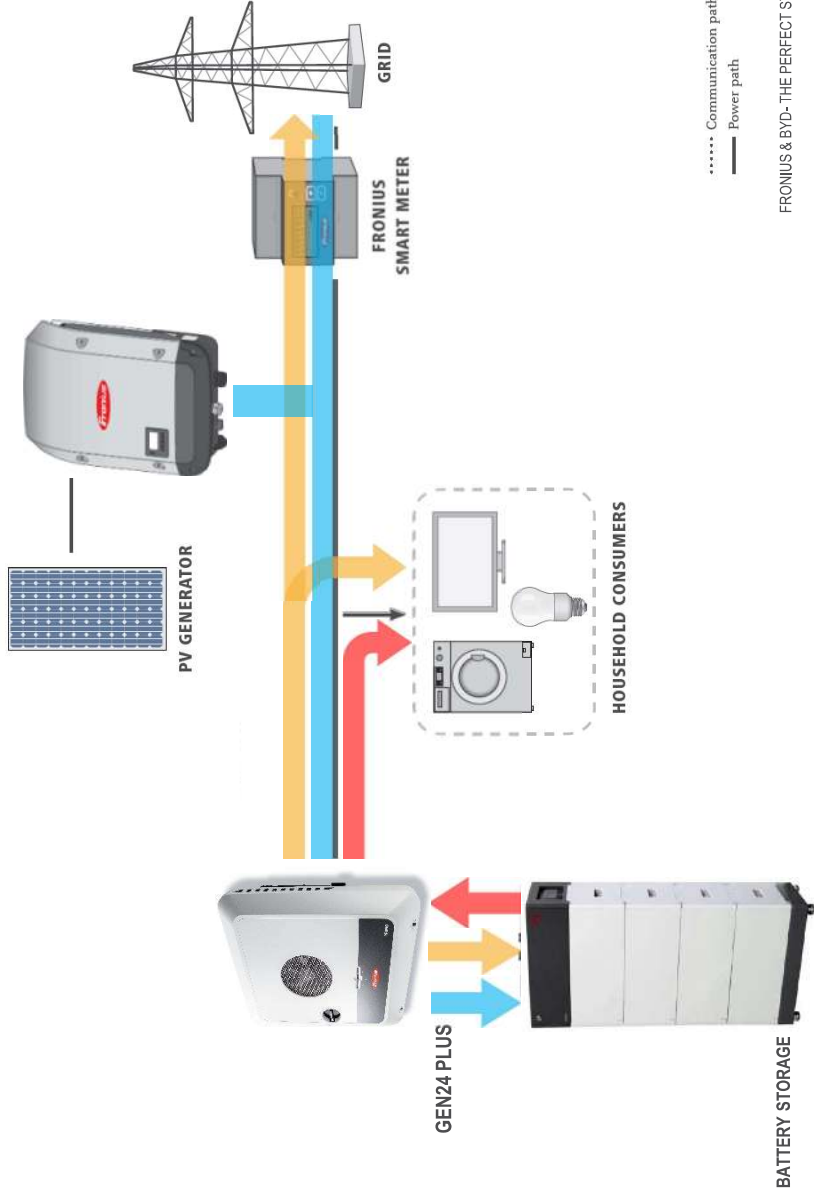
- Within the 2020 energy storage inspection at the HTW Berlin, the Fronius Symo GEN24 Plus 10.0 in combination with the BYD Battery-Box HV secured the first place with an overall efficiency of 94% - which is an unprecedented value.
- This sensational result is being achieved due to the very high conversion efficiencies of the inverter.
- These high efficiencies lead to maximum yields.
- This allows best captive use rates and fastest profitability.



/ Link: <https://pvspeicher.htw-berlin.de/speicher-inspektion-2020/>



# MULTI FLOW TECHNOLOGY



..... Communication path  
 — Power path



# BASIC BACK-UP FUNCTION: PV POINT



## PV POINT

### Back-up.

Delivered only in the event of a power failure

### Automatic activation

In the event of a power failure

### Electric loads

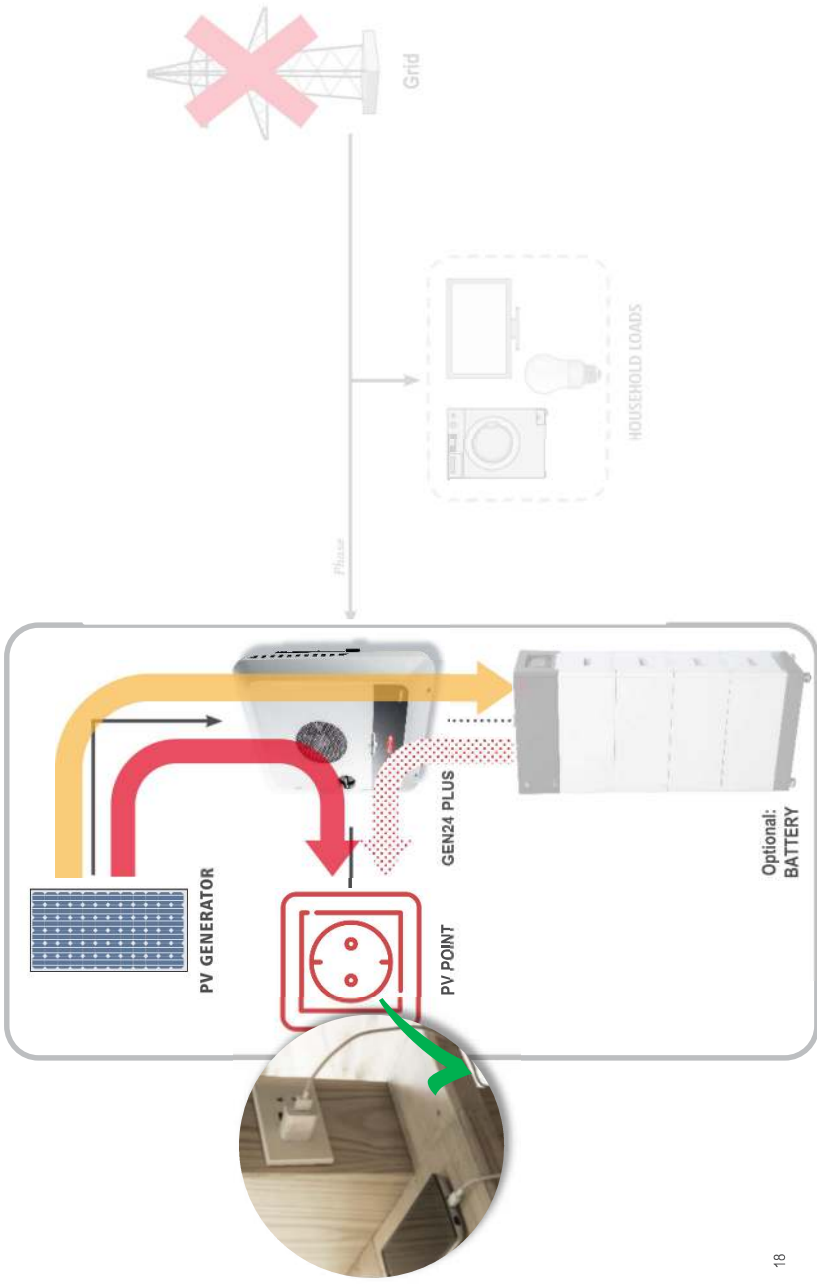
Up to 3 kW/13 A, 1-phase– (4,1 kW for 5 seconds)

### Easy installation

No additional installation is required



# BASIC GRID BACK-UP: PV POINT







# MAXIMUM BACK-UP POWER: FULL-BACKUP



## 3-phase BACK-UP POWER

### Full-Back-up

Supply of the whole household

### Max supply.

Automatic switch (Switch over) <90 sec.

### Electrical loads

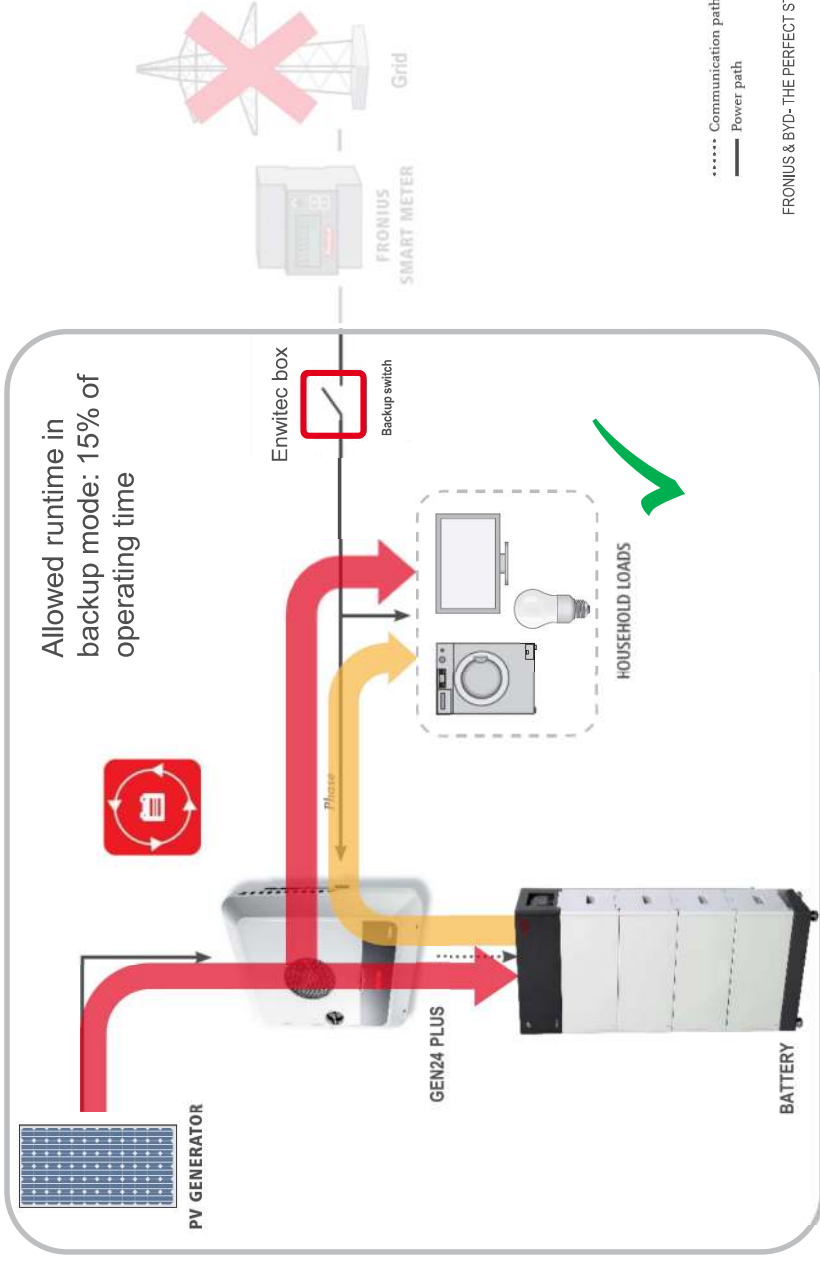
1-phase and/or 3-phase up to 10 kw

### Maximum energy consumption

Parallel (dis)charging (Multi Flow)



# MAXIMUM BACK-UP POWER: FULL-BACKUP







# FRONIUS GEN24 PLUS THIRD PARTY AND E-MOBILITY

**Open interfaces**

Easy integration

Home automation system

Electric Cars

Integration of heat pumps





# OPEN INTERFACES



<b>Communication (INTERFACES ON BOARD)</b>
LAN
WLAN
Modbus RTU/TCP SunSpec
Digital IO's
Fronius Solar API (JSON)



# FRONIUS GEN24 PLUS

EASY AND FLEXIBLE DESIGN



# FRONIUS SYMO GEN24 PLUS

Flexible Design

**Power Class: : 6.0, 8.0, 10.0 kW**

Wide voltage range

Strings from 3 up to 24 PV modules

2 MPPT : 25 A/ 12,5 A

1 battery : 22 A

Max. DC voltage: 1000 V DC

MPPT voltage range: 80 - 800 VDC

150 % over dimensioning

**Superflex-Design  
ON BOARD**



FRONIUS & BYD- THE PERFECT STORAGE SOLUTION





# FRONIUS GEN24 PLUS MAX YIELD DESPITE PARTIAL SHADING

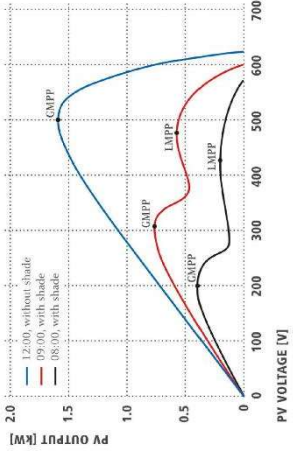


Figure 1. Power/voltage diagram of a shaded PV system.

**Dynamic-Peak Manager  
ON BOARD**



**Dynamic-Peak Manager**

Integrated shading management

Low losses despite partial shading

Searching the whole I/V curve

Instead of optimizer for each single panel