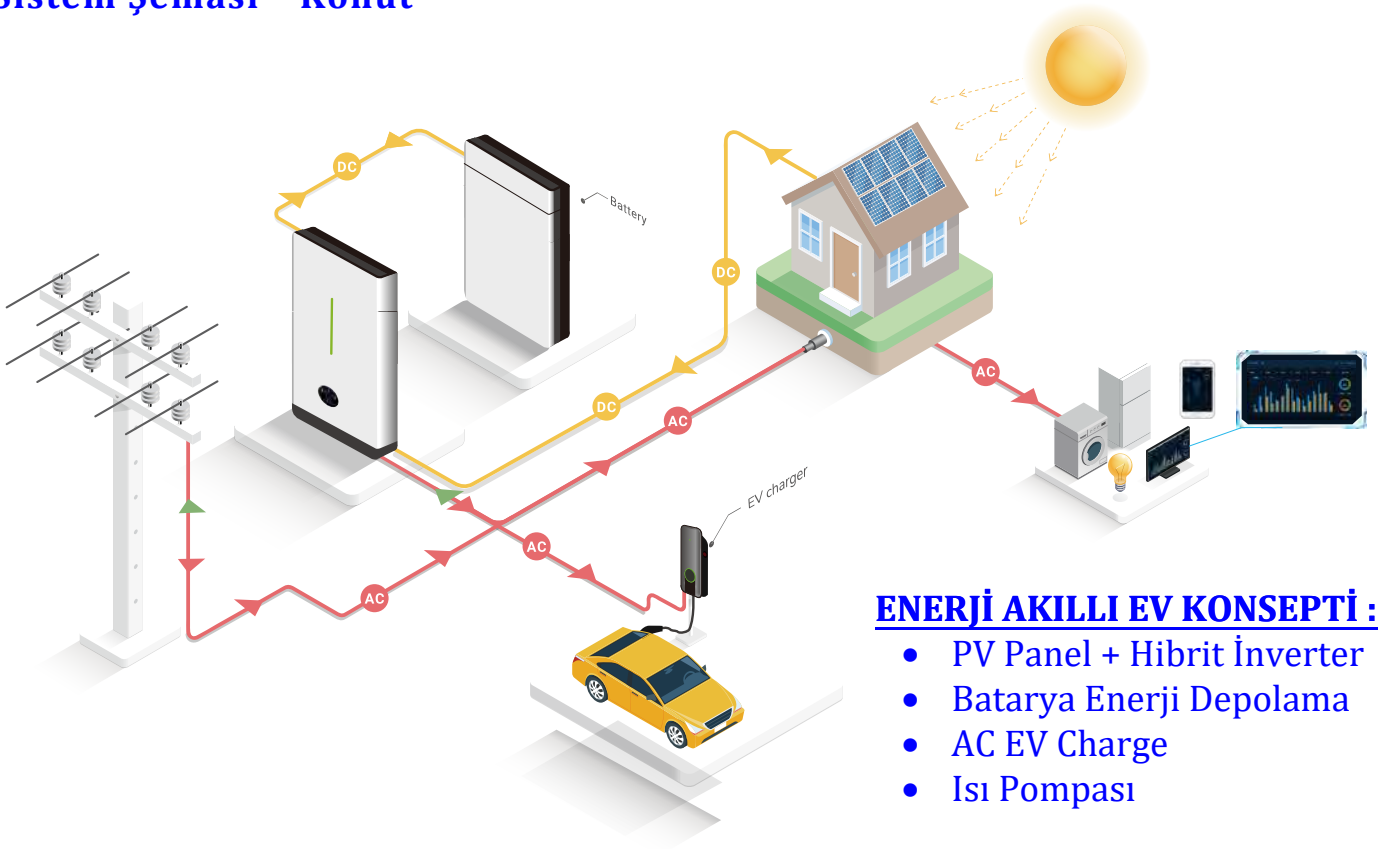




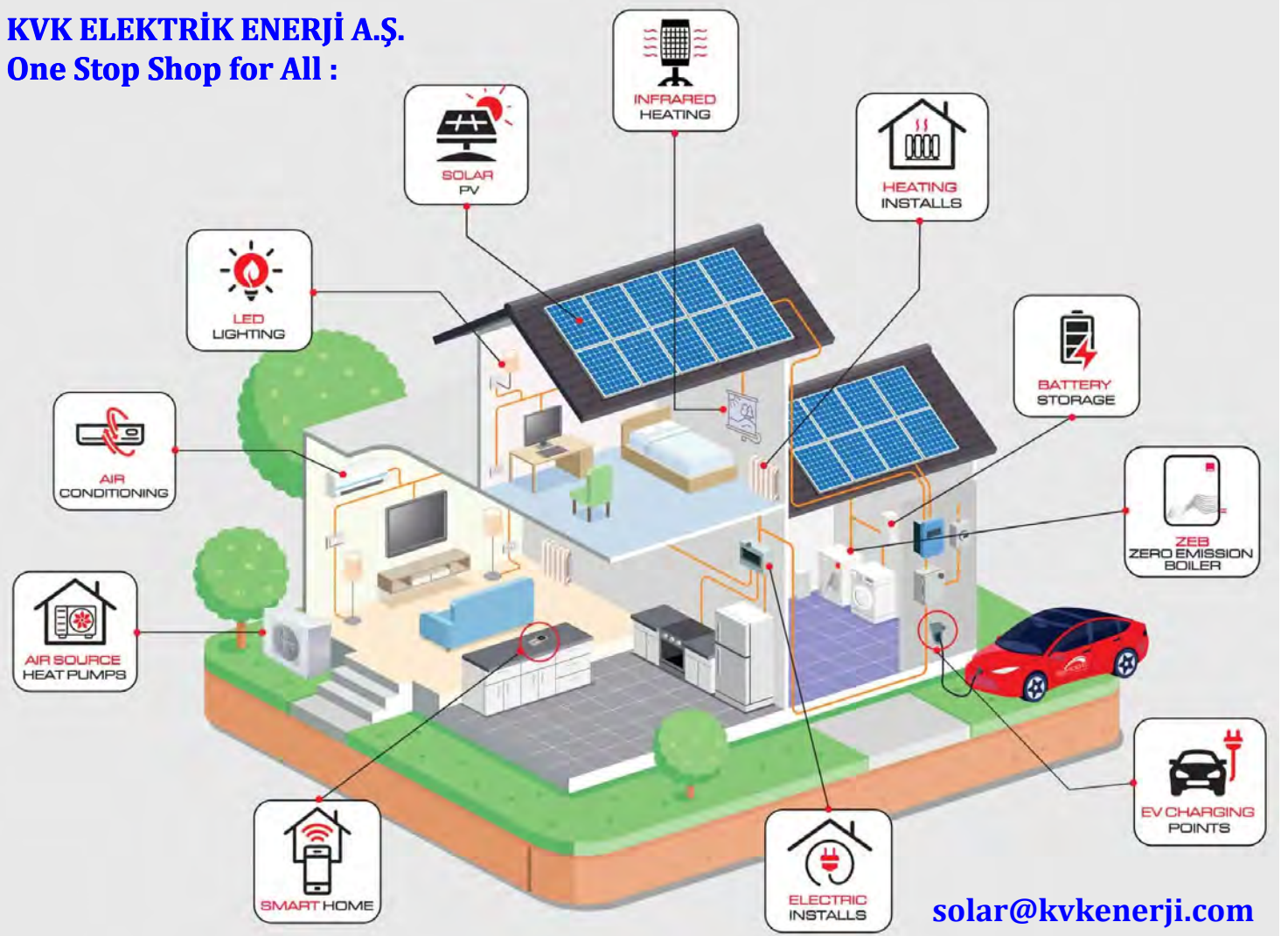
SOLAR KATALOG-2

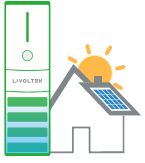
- Solar (Ev + İşyeri)
- Enerji Depolama

Sistem Şeması—Konut

**ENERJİ AKILLI EV KONSEPTİ :**

- PV Panel + Hibrit İnverter
- Batarya Enerji Depolama
- AC EV Charge
- Isı Pompası

KVK ELEKTRİK ENERJİ A.Ş.
One Stop Shop for All :




All-In-One Enerji Depolama Sistemi

Hyper-3000(A)/Hyper-3680(A)/Hyper-5000(A)

LIVOLTEK All-In-One ESS, hibrit inverter ve LFP bataryaları bir araya getirerek elektrik faturalarınızı azaltırken şebekeden enerji bağımsızlığınızı da sağlar. Yüksek verimi ile güneş panellerinden daha fazla enerji üretmenizi sağlarken şık tasarımı ve küçük hacmi ile estetiğin yanında evinizde daha az yer kaplar. Ayrıca, tak ve çalıştır olması ile daha hızlı kurulumlar yapmaya, izleme platformuna daha hızlı bağlanmaya ve daha kolay bakıma olanak tanır.

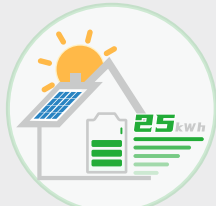


Özellikler

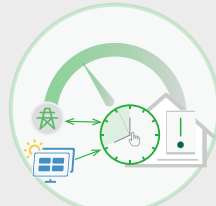
- Doğal Soğutma, Sessiz Çalışma
- Akıllı ve Kolay Kullanım
- Kolay Kapasite Artırılabilir Tasarım
- Akıllı Şarj ve Aktif Denge Özelliği



Modüler ve
Tümleşik Tasarım



25 kWh'a Kadar
Artırılabilir Kapasite



Üretim Kontrolü ve
Planlanabilir Kullanım



Verimli Öz Tüketim

Uyumlu Ürünler



Enerji Depolama Sistemleri



Şarj İstasyonları



PSD200-FI Dongle



Enerji Metre



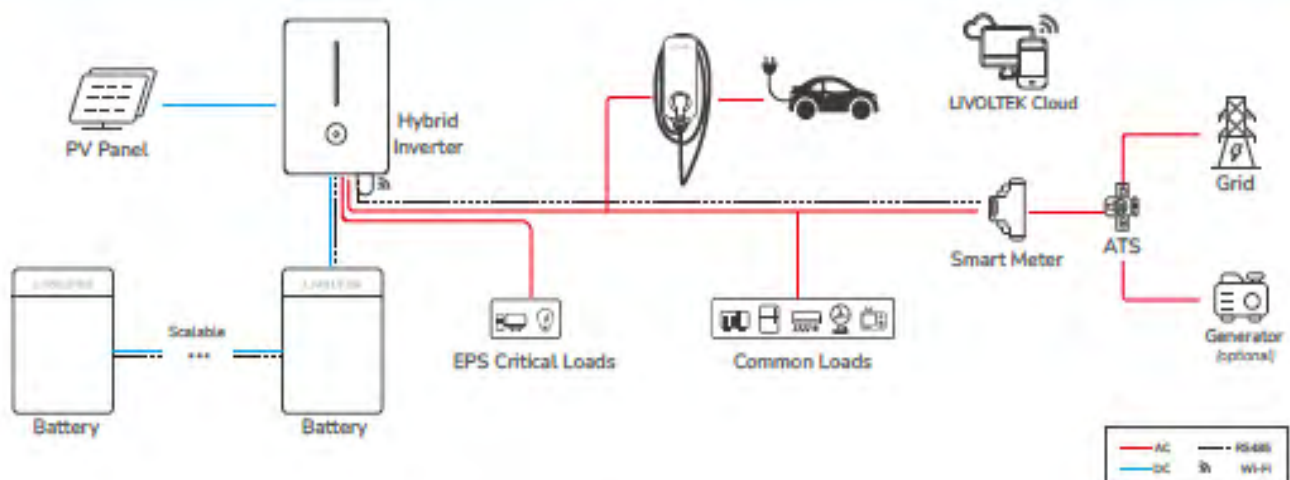
İzleme Sistemleri

Teknik Özellikler

Inverter Model	Hyper-3000(A)	Hyper-3680(A)	Hyper-5000(A)
AC Çıkış @ Grid			
AC Giriş Voltajı/Frekansı	186 ~ 290Vac/50 or 60Hz		
Nominal AC Gücü	3000W	3680W	5000W
Nominal AC Akımı	13.0A	16.0A	21.7A
AC Akım THD'si	<3%		
EPS Çıkış @ Off Grid			
EPS Çıkış Voltajı/Frekansı	220Vac/50 or 60Hz, Single Phase		
Sürekli Çıkış Gücü (@25C)	3kVA	3.68kVA	5kVA
EPS Çıkış Akımı	13.0A	16.0A	21.7A
Zirve Gücü	1.1 x Pnom, 60 Sec; 1.5 x Pnom, 100ms		
Güç Faktörü	~1 (Adjustable from 0.8 Leading to 0.8 Lagging)		
Dalga Formu	Tam Sinüs		
AC Voltajın THD'si	<3% with Resistive Load		
Solar Girişi			
Maks. PV Gerilimi	600V		
MPPT Voltaj Aralığı	125~550V		
Maks. PV Akımı	14A	14/14A	14/14A
Maks. Kısa Devre Akımı	17.5A	17.5/17.5A	17.5/17.5A
Dizi Sayısı	1	1	1
MPPT Sayısı	1	2	2
Batarya Girişi			
Batarya Türü	Lityum Batarya		
Batarya Voltajı	40~60V		
Akü için Galvanik İzolasyon	Evet		
Maksimum Şarj Akımı	60A	80A	100A
BMS İletişimi	CAN		
Koruma	Aşırı Gerilim, Düşük Gerilim, Aşırı Akım, Kısa Devre, Aşırı Sıcaklık		
Verimlilik			
AB Verimliliği	97.1%	97.4%	
Maks. Verimlilik	97.6%	97.8%	
Batarya Modeli		BLF51-5	
Hücre Tipi	LFP		
Nominal Enerji	5kWh		
Maks. Deşarj Derinliği	90%		
Nominal Gerilim	51.2V		
İşlem Voltaj Mesafesi	40-58.4V		
Nominal Kapasite	100Ah		
Maks. Şarj Akımı	50A		
Maks. Deşarj Akımı	100A		
Bağlantı Kapasitesi	Up to 5 modules/25kWh		



Residential 1-phase Hybrid PV ESS





INTRODUCTION

This is an integrated residential ESS which comes with a 3–8kW hybrid single-phase inverter and extensible battery modules, plug and play, capacity range from 5 to 20 kWh. It has excellent performance in economy, safety and robustness. In addition, intelligent functions like VPP, micro-grid, smart schedule and smart scene are all ready. It would be the best choice for householders.

SolaX IES

◀ Features

Economic

- All in one design, plug and play, expandable and installation easily
- Maximum 200% oversize and 200% PV input power
- Maximum 20A DC single string input current, support high power solar panel
- Low start output voltage makes inverter longer working time
- Built-in shadow tracking function
- Maximum Charge / Discharge Current up to 50A

Safe

- IP66 protection level
- AC&DC SPD type II, always guarding the inverter
- AFCI optional

Robust

- Robust back-up ability, switchover time <10ms(UPS level), up to 200% EPS output for 10s
- Battery heating technology, -30°C extreme environment operation

Intelligent

- AI ready, forecasting solar generation and home consumption, smart energy management strategy
- VPP ready, SolaX cloud support resource aggregator(2030.5, OpenADR)
- Micro-grid ready, supporting real-time power balance between PCS and Hybrid in grid-connected and off-grid scenarios.
- Support smart scene function, intelligent loads management (e.g., Heat pump, EV charger)
- Support 7×24h scheduling mode
- Support Wireless meter solution



SYSTEM OVERVIEW

System schematic



Rated output power [kW]	3 / 3.7 / 4.6 / 5 / 6 / 8			
Number of batteries	1	2	3	4
Norminal capacity [kWh] ^①	5.1	10.2	15.3	20.4
Usable energy [kWh] ^②	4.6	9.2	13.8	18.4
Max. charge/discharge power [kW] ^③	5.1	8	8	8
Degree of protection	IP66			
Operating temperature range [°C]	-30 to 53			
Allowable relative humidity range [%]	5-95 (No condensation)			
Max. operating altitude [m]	3000			
Net weight [kg] ^④	87.2	134.2	181.2	134.2 / 99.2
Dimension (W x H x D) [mm]	730 x 908 x 210	730 x 1226 x 210	730 x 1544 x 210	730 x 1226 x 210 / 730 x 809 x 150
Display	LCD			
Cooling concept	Natural cooling			
Topology	Transformerless			
Communication	RS485, Pocket-X, USB, CAN, DO, DI			

① Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge.

② System usable energy may vary with inverter different setting.

③ The max.charge/discharge power must not exceed the rated output power (the table takes the maximum power inverter as an example).

④ Different inverter models have different weights. The heaviest one is taken as an example.

SPECIFICATIONS

	X1-IES-3K	X1-IES-3.7K	X1-IES-4.6K	X1-IES-5K	X1-IES-6K	X1-IES-8K
INPUT PV						
Max. recommended PV array power [W]	6000	7400	9200	10000	12000	16000
Max. DC voltage [V]	600					
Nominal DC operating voltage [V]	360					
Max. input current (input PV1 / input PV2 / input PV3) [A]	PV1: 20 / PV2: 20	PV1: 20 / PV2: 20	PV1: 20 / PV2: 20 / PV3: 20	PV1: 20 / PV2: 20 / PV3: 20	PV1: 20 / PV2: 20 / PV3: 20	PV1: 20 / PV2: 20 / PV3: 20
Max. short circuit current (input PV1 / input PV2 / input PV3) [A]	PV1: 30 / PV2: 30	PV1: 30 / PV2: 30	PV1: 30 / PV2: 30 / PV3: 30	PV1: 30 / PV2: 30 / PV3: 30	PV1: 30 / PV2: 30 / PV3: 30	PV1: 30 / PV2: 30 / PV3: 30
MPPT voltage range [V]	40 to 560					
Start output voltage [V]	50					
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)	2 / (1 / 1)	3 / (1 / 1 / 1)	3 / (1 / 1 / 1)	3 / (1 / 1 / 1)	3 / (1 / 1 / 1)
INPUT AC						
Nominal AC power [VA]	6300	7360	9200	9200	9200	9200
Max. AC current [A]	27.4	32	40.0	40.0	40.0	40.0
Rated grid frequency [Hz]	50 / 60					
Power factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)					
OUTPUT AC (On-Grid)						
Nominal AC power [VA]	3000	3680	4600	5000	6000	8000
Max. apparent AC power [VA]	3300	3680	4600	5000 (4600 for VDE4105, 4999 for AS4777, 5000 for C10/11)	6600	8000
Rated grid voltage(AC voltage range) [V]	Single phase, 220 / 230 / 240					
Rated grid frequency [Hz]	50 / 60					
Rated AC output current [A] (at 230V, 50Hz)	13.1	16	20	21.8	26.1	34.8
Max. AC current [A]	14.4	16	20	21.8	28.7	34.8
Displacement power factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)					
Total harmonic distortion (THDi, rated power) [%]	< 3					

EPS OUTPUT (With battery)						
EPS peak power [VA]	2Pn, 10s (Full sun)					
EPS rated power [VA]	3000	3680	4600	5000	6000	8000
EPS rated voltage [V]; frequency [Hz]	Single phase, 220 / 230 / 240; 50/60					
EPS rated current [A]	13.1	16	20	21.8	26.1	34.8
Switchover time [ms]	< 10					
Total harmonic distortion (THDv, linear Load) [%]	< 3					
BATTERY						
Battery voltage range [V]	80 ~ 480					
Max.charge / discharge current [A]	50					
Communication interfaces	CAN / RS485					
BMS module	TBMS-MCS0800E					
Battery module	TP-HS50E					
Composition	TBMS-MCS0800E + TP-HS50E * n + Base Dimensions + Series Box (Required for two columns)					
Battery type	Li-ion (LFP)					
Norminal capacity [kWh] / Nominal capacity [Ah] ^①	5.1 / 50					
Usable energy [kWh] ^②	4.6					
Standard power [kW]	3					
Max power [kW]	5.1					
Max. charge / discharge current [A] ^③	50					
Cycle life [Cycles]	> 6000					
Warranty [Years]	10					
Safety	CE, RCM, TUV (IEC62619), RoHS, REACH					
TBMS-MCS0800E dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 165 / 9.3					
TP-HS50E dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 318 / 47					
Base dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 75 / 3.9					
Series box dimensions(L x W x H) [mm] / Weight [kg]	167 x 121 x 91.5 / 1.3					
EFFICIENCY						
Max. efficiency [%] / Euro-efficiency [%]	97.6 / 97.0					
Rated battery charge [%] / Discharge efficiency [%]	98.5 / 97					
GENERAL DATA (INVERTER)						
Demensions (W/H/D) [mm]	717 x 350 x 210					
Weight [kg]	< 28					
Operating temperature range [°C]	– 35 to 60 (derating at 45°C)					
Relative humidity [%]	0 to 100 (condensing)					
Storage temperature [°C]	-40 to 65					
Noise emission (typical) [dB(A)]	< 35					
Internal consumption (night) [W]	< 40W for hot standby, < 5W for cold standby					
PROTECTION						
Anti-Islanding protection	Yes					
DC reverse polarity protection	Yes					
Insulation monitoring	Yes					
Residual current monitoring	Yes					
AC overcurrent protection	Yes					
AC short-circuit protection	Yes					
AC overvoltage protection	Yes					
Over-heat protection	Yes					
AFCI	OPT					
Surge protection	Type II , DC and AC					
STANDARD						
Safety	IEC62109-1 / ICE62109-2					
EMC	EN 61000-6-1 / EN 61000-6-2 / EN 61000-6-3					
Certification	VDE 0126-1-1 A1:2012 / VDE-AR-N 4105 /G98/G99/ AS4777 / EN50549 / CEI 0-21					

① Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge.

② System usable energy may vary with inverter different setting.

③ Discharge: In case of battery cell's temperature range of -20°C~10°Cand 45°C~53 °C,the discharge current will be reduced; Charge: In case of battery cell's temperature range of 0°C~25°C and 45°C~53°C, the charge current will be reduced. Product charge or discharge power depends on the actual temperature of battery pack.

All-in-one Balcony ESS



X-MS 1920

Features

- Up to 2400W solar input with 4 MPPTs
- All-in-one compact design, plug-and-play installation
- Max charging power 3400 W, 1000 W bidirectional AC power
- UPS-level switchover time <10ms
- DIY expansion to 11.52 kWh capacity
- IP65 ingress protection
- Built-in battery heating function, reliable performance in extreme temperature (-20°C)
- Zero waste with self-consumption
- Long-lasting power with 6000 charge cycles
- Support TOU mode to maximize family benefits

X-MS 1920

PV INPUT	
Max. PV input power	2400 W
Max. PV input voltage	60 V
Operation voltage range	16 ~ 60 V
Max. PV input current	16 A
Max. input short circuit current I _{sc}	20 A
No. of MPP trackers	4
AC ON-GRID	
Rated Input / output apparent power	800 VA*
Max. AC Input / output apparent power	1000 VA
Rated AC output voltage	220 V / 230 V / 240 V
Rated AC voltage range	180 ~ 276 V
Rated AC frequency	50 Hz / 60 Hz
AC frequency / range	50 ± 5 Hz / 60 ± 5 Hz
Rated AC input / output current	3.64 A / 3.48 A / 3.34 A
Max. AC input / output current	4.55 A / 4.35 A / 4.17 A
Power factor range	~ 1 (0.8 lagging to 0.8 leading)
AC OFF-GRID	
Rated output power	1000 VA
Peak output apparent power	1600 VA, 10s
Rated AC output voltage	220 V / 230 V / 240 V
Rated AC frequency	50 Hz / 60 Hz
Max. AC output current	7.28 A / 6.96 A / 6.67 A
BATTERY DATA	
Battery type	LFP
Battery Rated voltage	19.2 V
Battery Rated energy	1.92 KWh
Battery Operating voltage	15.9 ~ 21.7 V
Battery cycle life	≥6000 (@25°C ± 2°C, 0.5C / 0.5C, 70%EOL)
Rated charging / discharging power	1000 W
Max. discharging current	100 A
Max. continuous charging / discharging current	63 A
Rated charging / discharging current	52 A
GENERAL	
Self-heating	Activated below 0°C
Ingress protection	IP65
Operation temperature range	-20 ~ 55°C
Relative humidity	5 ~ 95% (No Condensing)
Max. operation altitude	3000 m
Dimensions (W x H x D)	460 x 240 x 240 mm
Weight	24 kg
Cooling concept	Natural cooling
Communication	WiFi & Bluetooth
Parallel battery capacity	Up to 5 Units
STANDARD	
Safety	IEC62109-1 / -2
EMC	IEC62619, UN38.3, IEC / EN 61000-6-1, IEC / EN 61000-6-2, IEC / EN 61000-6-3, IEC / EN 61000-6-4, CE-RED
Certifications	VDE4105 / 0124, IEC61727 / 62116, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002

* It can be customized by using the Solax App and can be adjusted up to 1000 VA



EPS FUNCTION



EXPAND CAPACITY



95% DOD



DATASHEET

Avocado Series

All-in-One residential micro storage system, plug and play, highly flexible and extendable.

0.8kW



Advanced System Monitoring
with FoxCloud V2.0



For more information about the Fox ESS range, visit:
www.fox-ess.com

Mini Qube

ENERGY STORAGE SYSTEM



Powered by Fox ESS



FULLY INTEGRATED STORAGE SYSTEM
Seamlessly integrated, truly all-in-one solution.



LESS IS MORE
Sleek, minimalist design for effortless one-step installation.



EASY INSTALLATION
Flexible configuration, plug and play set-up, built-in fuse protection.



IP65 RATED
High level of protection, suitable for outdoor installation.

TECHNICAL SPECIFICATIONS

MODEL		MQ2200-M-H	MQ2200-M-A
AC INPUT			
Nominal Voltage [V]		220/230/240	
Nominal Frequency [Hz]		50/60	
Rated Input Current [A]		5.2	
Max. Input Current [A]		5.7	
Max. Apparent Power [VA]		1200	
AC OUTPUT			
Rated Power [W]		800	
Max. Apparent Power [VA]		800	
Nominal Voltage [V]		220/230/240	
Nominal Frequency [Hz]		50/60	
Rated Output Current [A]		3.4	
Max. output Current [A]		3.6	
Power Factor		0.8 leading to 0.8 lagging	
EPS OUTPUT			
Nominal Voltage [V]		220/230/240	
Rated Output Current [A]		5.2	
Max. Output Current [A]		5.7	
Nominal Frequency [Hz]		50/60	
Max. Apparent Power [VA]		1200	
PV INPUT (ONLY FOR HYBRID)			
Max. Input Power [W]	2400	/	
Absolute Max. Voltage [V]	60	/	
MPPT Voltage Range [V]	10-60	/	
Max.input Current [A]	16±1	/	
Max.short Circuit Current [A]	18±1		
No.of Independent MPPTs	4		
No.of Strings Per MPPT	1		
BATTERY TECHNICAL SPECIFICATION			
Battery Type		LiFePO ₄	
Battery Nominal Voltage [V]		35.2	
Battery Nominal Energy [kWh]		2.11	
Battery Operating Voltage [V]		31.9 ~ 40.15	
Battery Cycle Life		>4000(80%SOH, @25°C±2°C, 0.5C/0.5C, 90%DOD)	
GENERAL DATA			
Demensions (W*H*D) [mm]		420*285*255	
Weight Approximate [kg]		26	
Ingress Protection		IP65	
Operating Temperature Range [°C]		-20 ~ 55	
Max. Operating Altitude [m]		2000	
Relative Humidity [%]		15 ~85 (No Condensing)	
Installation Style		Floor-mounted	
Display		APP & Battery LED (SOC, Alarm)	
Communication Interfaces		Wi-Fi, Bluetooth, LAN, RS485	
STANDARD COMPLIANCE			
Safety EMC/Standard		IEC62619, UN38.3, IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN61000-6-3, IEC/EN 61000-6-4	
Grid Regulation		EN50549, VDE4105, C10/11	
Battery Certification		UN38.3, IEC 62619	



2kWh
LFP Battery



800W On-grid and
Off-grid Operation

Konut Tipi 1-Faz Enerji Depolama Sistemleri



İnvertör Özellikleri	PRESS-505	PRESS-510	PRESS-515	PRESS-520
Maks. Verimlilik	97.3% (PV-AC), 94.0% (BAT-AC)			
[PV] Maks. Gücü	9000W			
[PV] Maks. Gerilim	550V			
[PV] MPPT Gerilim Aralığı	200V-480V			
[PV] Maks. Giriş Akımı	15A			
[PV] MPPT Sayısı	2			
[BATARYA] Gerilim Aralığı	40V-60V			
[BATARYA] Maks. Şarj/Deşarj Gücü	5000W			
[BATARYA] Maks. Şarj/Deşarj Akımı	120A			
[AC] Nominal Çıkış Gücü	5000W			
[AC] Nominal Gerilim	220V/230V (Tek Faz)			
[AC] Gerilim Aralığı	150V-300V (Ayarlanabilir)			
[AC] Maks. Çıkış Akımı	25A			
[AC] Frekans Aralığı	45Hz-65Hz			
[AC] THDI	<3%			
Arayüz / Haberleşme	Screen, CAN			
Garanti	10 Yıl			
Paralel Bağlantı	Yok			
Batarya Özellikleri				
Batarya Tipi	LiFePO ₄ - Prizmatik			
Nominal Gerilim	51.2V			
Çalışma Gerilim Aralığı	44V - 56.8V			
Nominal Kapasite	100Ah	200Ah	300Ah	400Ah
Nominal Enerji Kapasitesi	5.12kWh	10.24kWh	15.36kWh	20.48kWh
Standart Şarj/Deşarj Akımı	50A / 50A	100A / 100A	150A / 150A	200A / 200A
Maks. Sürekli Çıkış Akımı	100A	200A	300A	400A
Döngü Ömrü (*)	≥6000 döngü			
Şarj Sıcaklığı	0~50°C			
Deşarj Sıcaklığı (**)	-10~55°C			
Depolama Sıcaklığı	-20~55°C			
Mekanik Özellikler				
Koruma Seviyesi	IP20			
Boyut (ExDxY)	648x284x1282 mm	648x284x1732 mm	648x284x2182 mm	1296x284x1732 mm
Ağırlık	90 ±5 kg	140 ±5kg	190 ±5 kg	240 ±5 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir



X1-Micro (1-in-1)

The SolaX X1-Micro series of microinverters is renowned for its exceptional power output, making it one of the highest-rated models among 1-in-1 microinverters with an impressive capacity of up to 600 VA. These products are designed to accommodate high power modules, incorporating one independent MPPTs and supporting substantial input current and output power.

With the integration of PLC wired technology, the X1-Micro series ensures reliable and consistent communication, providing users with a seamless monitoring and control experience. Offering a cost-effective solution, these microinverters are well-suited for both residential and commercial solar applications. Additionally, they are fully compatible with the SolaX Hybrid system and can be seamlessly integrated into AC coupled systems on the market, enhancing their versatility and adaptability.

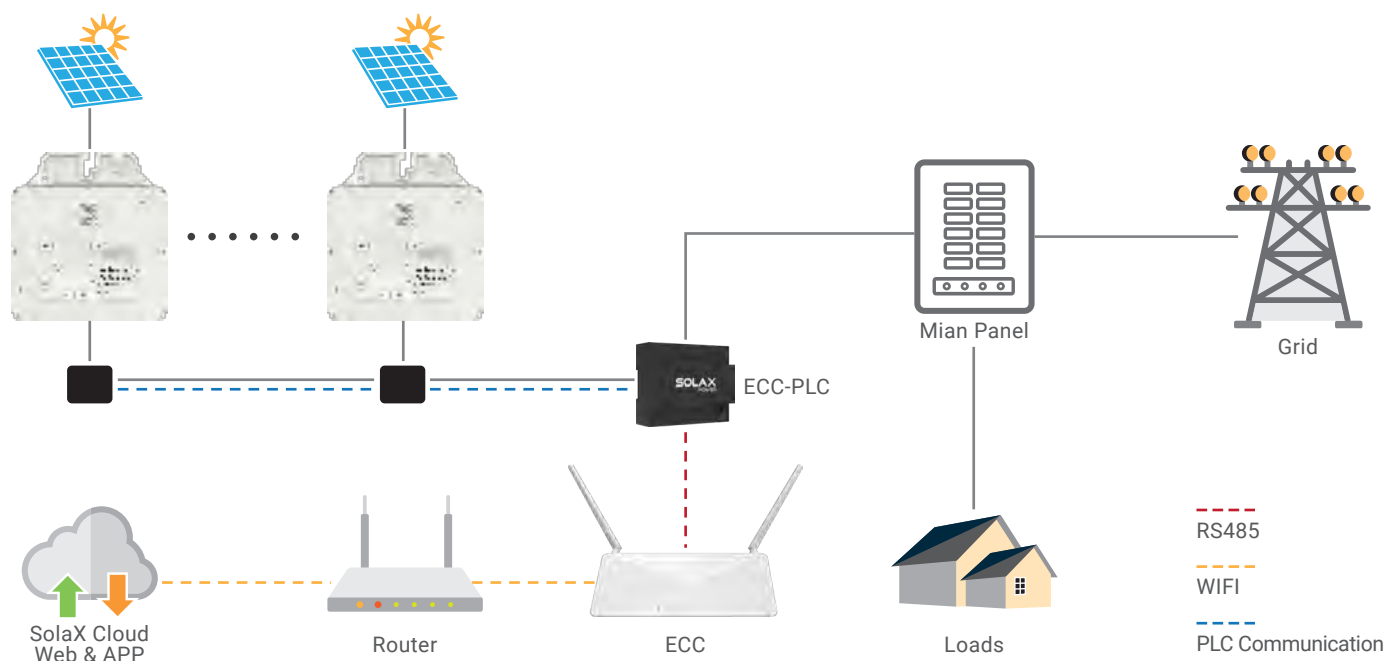


**X1-Micro 300 / X1-Micro 400 / X1-Micro 450 /
X1-Micro 500 / X1-Micro 600**

Features

- Max output power up to 600VA with one independent input channels(MPPT)
- Up to 20A DC input current to be compatible with the high power PV module
- Built-in industrial grade PLC module for high reliability
- Safety protection relay integrated
- Support micro-grid, AC coupling solution with existing storage system
- Support the integration of a single-phase microinverter into a three-phase power grid system
- With Reactive Power Control and Rapid Shutdown Function
- Easy to install and maintain with small size, light weight
- IP67 protection class, more reliable

Communication Diagram



X1-Micro 300

X1-Micro 400

X1-Micro 450

X1-Micro 500

X1-Micro 600

DC INPUT

Max. PV input power [W]	240 to 410+	320 to 550+	360 to 600+	400 to 670+	400 to 670+
Max. PV input voltage [V]			60		
MPPT voltage range[V]	22-45			22-55	
Start-up voltage [V]			20		
Max. PV input current[A]	14	18		20	
Max. input short circuit current I _{sc} [A]	20	20		25	
No. of MPP trackers			1		
Strings per MPP tracker			1		

AC OUTPUT

Rated AC output power [VA]	300	400	450	500	600
Rated grid voltage/range[V]			220 or 230 or 240 / 180-275		
Rated AC output current [A]	1.36 / 1.30 / 1.25	1.82 / 1.74 / 1.67	20.5 / 19.6 / 1.88	2.27 / 2.17 / 2.08	2.73 / 2.61 / 2.50
Nominal AC frequency/range [Hz]			50/45-55 or 60/55-65		
Maximum units per branch 25A	18 / 19 / 20	13 / 14 / 15	12 / 12 / 13	11 / 11 / 12	9 / 9 / 10
Power Factor range (adjustable)			>0.99(-0.8~0.8 adjustable)		
THDi (Rated power) [%]			< 3%		

Efficiency

Max. efficiency			96.50%		
Nominal MPPT efficiency			99.90%		
Night power consumption [mW]			< 40		

STANDARD

Safety	IEC62109-1/-2, IEC61000-6-1/-2/-3-4, IEC61000-3-2, IEC61000-3-3, IEC 61727, IEC 62116, IEC 61683				
Grid Connection Standard	EN50549-1:2019, VDE-AR-N 4105: 2018, VFR 2019, RD1699:2011, CEI 0-21:2019, ABNT NBR 16149, ABNT NBR 16150, AS/NZS 4777.2:2015				

ENVIRONMENT LIMIT

Ingress protection rating	IP67 (NEMA 6)				
Operating ambient temperature range [°C]	-40 ~ 65°C				
Humidity[%]	0 ~ 100(condensing)				
Storage temperature[°C]	- 40°C ~ 65°C				

GENERAL

Dimension(W x H x D) [mm]	206 x 178 x 34				
Weight [kg]	1.75				
Cooling concept	Natural convection				
Communication	PLC				
Monitoring	Solax Cloud				



X1-Micro 2 in 1

The SolaX X1-Micro series is renowned for its exceptional power output, positioning itself as one of the top-rated models among 2-in-1 microinverters, boasting an impressive capacity of up to 1200 VA.

Specifically designed to cater to the latest and previous generation of high-power modules, these microinverters feature two independent MPPTs and robust support for input current and output power.

Seamlessly incorporating Wi-Fi wireless technology, the X1-Micro series ensures reliable and consistent communication, offering users a smooth monitoring and control experience. Delivering a cost-effective solution, these microinverters are highly suitable for both residential and commercial solar applications. Furthermore, they are fully compatible with the SolaX Hybrid system and seamlessly integrate with various AC coupled systems available in the market, thus enhancing their versatility and adaptability.

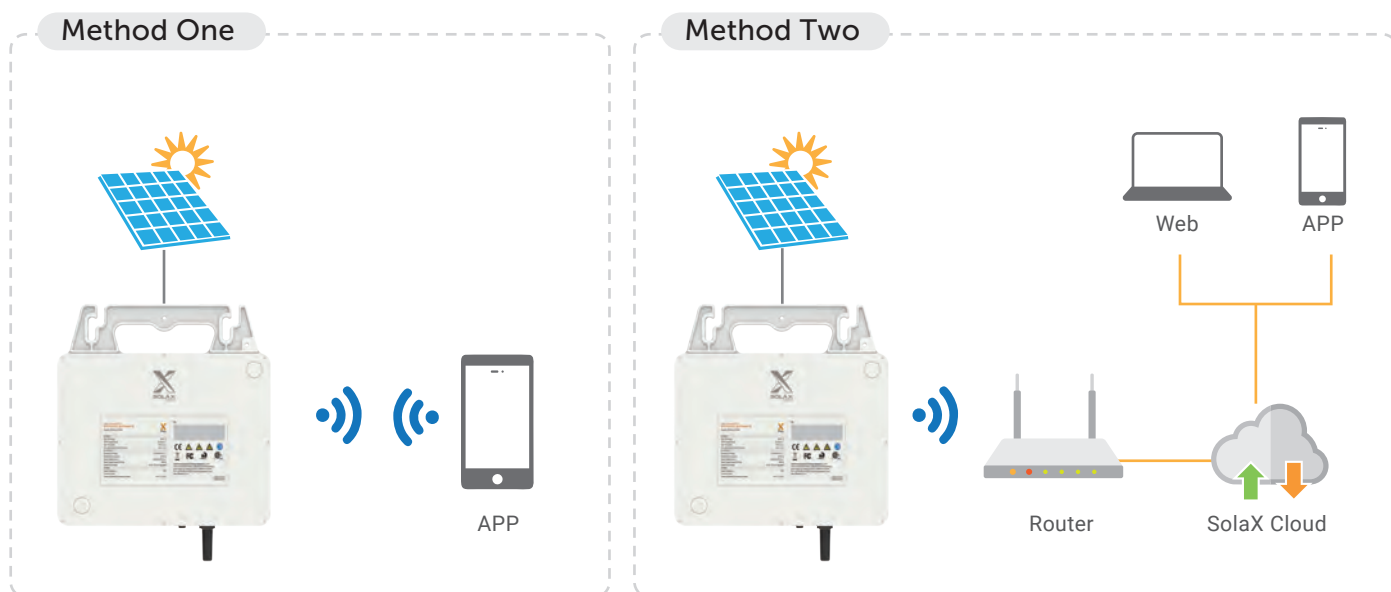


**X1-Micro 800 / X1-Micro 900 /
X1-Micro 1000 / X1-Micro 1200**

Features

- Max output power up to 1200VA with two independent input channels(MPPT)
- Up to 20A DC input current to be compatible with the high power PV module
- Built-in industrial grade Wi-Fi module for high reliability
- Safety protection relay integrated
- Support micro-grid, AC coupling solution with existing storage system
- Support the integration of a single-phase microinverter into a three-phase power grid system
- With Reactive Power Control and Rapid Shutdown Function
- Easy to install and maintain with small size, light weight
- IP67 protection class, more reliable

Communication Diagram



X1-Micro 800

X1-Micro 900

X1-Micro 1000

X1-Micro 1200

DC INPUT

Max. PV input power [W]	320 to 540+	360 to 600+	400 to 670+	400 to 670+
Max. PV input voltage [V]		60		
MPPT voltage range [V]		22-60		
Start-up voltage [V]		22		
Max. PV input current [A]	2 × 15	2 × 16	2 × 20	2 × 20
Max. input short circuit current Isc [A]	2 × 20	2 × 25	2 × 30	2 × 30
No. of MPP trackers		2		
Strings per MPP tracker		1		

AC OUTPUT

Rated AC output power [VA]	800	900	1000	1200
Maximum continuous output power [VA]	800	900	1000	1200
Maximum continuous output current [A]	3.64@220V 3.48@230V 3.34@240V	4.10@220V 3.92@230V 3.75@240V	4.55@220V 4.35@230V 4.17@240V	5.46@220V 5.22@230V 5.00@240V
Rated grid voltage/range [V]		220 or 230 or 240 / 180-264		
Nominal AC frequency/range [Hz]		50/45-55 or 60/55-65		
Maximum units per 10AWG branch*	11@220V 11@230V 12@240V	9@220V 10@230V 10@240V	8@220V 9@230V 9@240V	7@220V 7@230V 8@240V
Maximum units per 12AWG branch*	8@220V 9@230V 9@240V	7@220V 8@230V 8@240V	7@220V 7@230V 7@240V	5@220V 6@230V 6@240V
Power Factor range		>0.99(-0.8~0.8 adjustable)		
THDi (Rated power) [%]		<3		

EFFICIENCY

Max. Efficiency	96.50%
Nominal MPPT efficiency	99.9%
Night power consumption [mW]	< 40

STANDARD

Safety	IEC 62109
EMC	IEC 61000, EN 62920, EN 301489, EN 55011
Grid Connection Standard	IEC 61727, IEC 62116, EN 50549, ORDINANCE No. 140, ORDINANCE NO. 515

ENVIRONMENT LIMIT

Ingress protection rating	IP67
Operating ambient temperature range [°C]	-40 to 65
Humidity[%]	0 ~ 100 (condensing)
Storage temperature [°C]	-40 to 65

GENERAL

Dimension(W x H x D) [mm]	260 × 212 × 40
Weight [kg]	4.1
Cooling concept	Natural convection
Communication	Built-in Wi-Fi
Monitoring	Solax Cloud

* Refer to local requirements for exact number of microinverters per branch.

*V1.5. Information may be subject to modify without notice.



X1-Micro (4-in-1)

The SolaX X1-Micro series of microinverters stands out as one of the most powerful options in the 4-in-1 microinverter category, boasting an impressive output power of up to 2200 VA. These cutting-edge products are specifically designed to handle the latest and previous generation of high-power modules with 4 independent MPPTs, allowing for substantial input current and output power capabilities. The integration of a reliable Wi-Fi wireless solution ensures consistent and dependable communication functionality. Offering a cost-effective solution for both residential and commercial solar applications, these microinverters are fully compatible with SolaX Hybrid systems and can also be seamlessly integrated into AC coupled systems on the market.

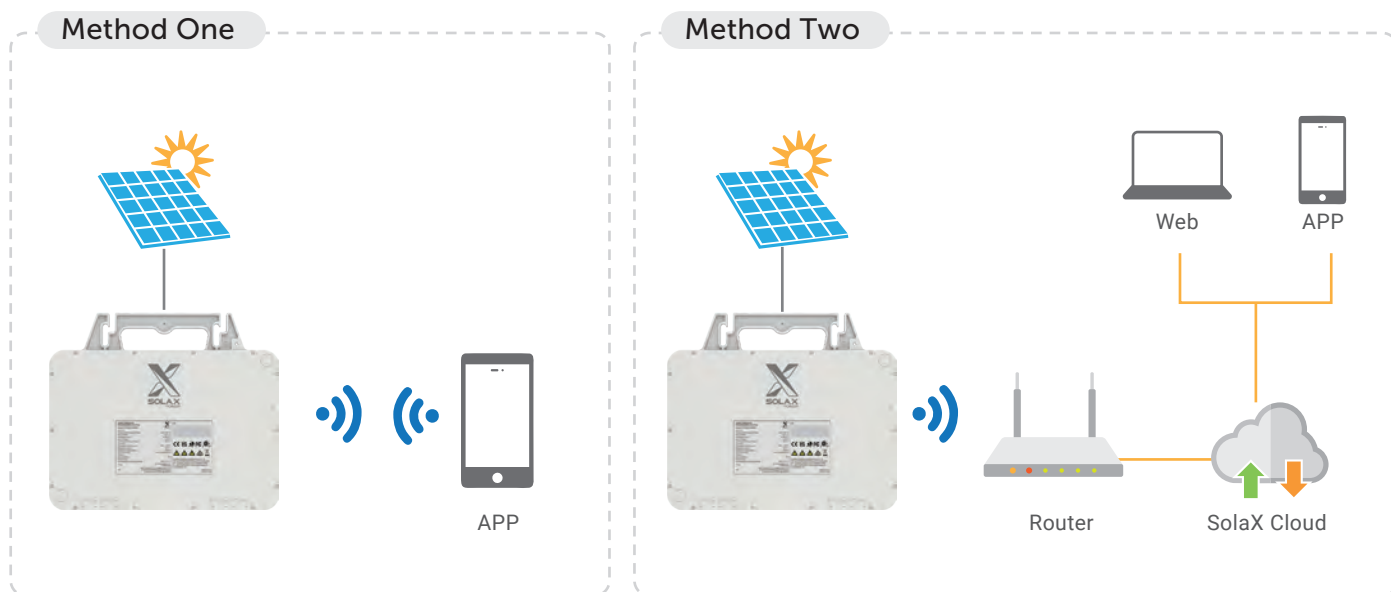


**X1-Micro 1300 / X1-Micro 1500 / X1-Micro 1600 /
X1-Micro 1800 / X1-Micro 2000 / X1-Micro 2200**

Features

- Max output power up to 2200VA with four independent input channels(MPPT)
- Up to 20A DC input current to be compatible with the high power PV module
- Built-in industrial grade Wi-Fi module for high reliability
- Safety protection relay integrated
- Support micro-grid, AC coupling solution with existing storage system
- Support the integration of a single-phase microinverter into a three-phase power grid system
- With Reactive Power Control and Rapid Shutdown Function
- Easy to install and maintain with small size, light weight
- IP67 protection class, more reliable

Communication Diagram



X1-Micro

X1-Micro 1300 X1-Micro 1500 X1-Micro 1600 X1-Micro 1800 X1-Micro 2000 X1-Micro 2200

DC INPUT

Max. PV input power [W]	300 to 505+	320 to 540+	360 to 600+	400 to 600+	400 to 670+	400 to 670+
Max. PV input voltage [V]	60					
MPPT voltage range [V]	22-45	22-55				
Start-up voltage [V]	20					
Max. PV input current [A]	4 × 15			4 × 20		
Max. input short circuit current Isc [A]	4 × 20			4 × 30		
No. of MPP trackers	4					
Strings per MPP tracker	1					

AC OUTPUT

Rated AC output power [VA]	1300	1500	1600	1800	2000	2200
Maximum continuous output power [VA]	1300	1500	1600	1800	2000	2200
Rated AC output current [A]	5.91/5.66/5.42	6.82/6.53/6.25	7.28/6.96/6.67	8.19/7.83/7.50	9.10/8.70/8.34	10.00/9.57/9.17
Rated grid voltage/range [V]	220 or 230 or 240 / 180-275					
Nominal AC frequency/range [Hz]	50/45-55 or 60/55-65					
Maximum units per 10AWG branch	6/7/7	5/6/6	5/5/6	4/5/5	4/4/4	4/4/4
Maximum units per 12AWG branch	5/5/5	4/4/5	4/4/4	3/4/4	3/3/3	3/3/3
Power Factor range	>0.99(-0.8~0.8 adjustable)					
THDi (Rated power) [%]	<3					

EFFICIENCY

Max. Efficiency	96.50%					
Nominal MPPT efficiency	99.9%					
Night power consumption [mW]	< 40					

STANDARD

Safety	IEC62109-1/-2, IEC61000-6-1/-2/-3-4, IEC61000-3-2, IEC61000-3-3, IEC 61727, IEC 62116, IEC 61683					
Grid Connection Standard	EN50549-1:2019, VDE-AR-N 4105: 2018, VFR 2019, RD1699:2011, CEI 0-21:2019, ABNT NBR 16149, ABNT NBR 16150, AS/NZS 4777.2:2015					

ENVIRONMENT LIMIT

Ingress protection rating	IP67					
Operating ambient temperature range [°C]	-40 to 65					
Humidity[%]	0 ~ 100(condensing)					
Storage temperature [°C]	-40 to 65					

GENERAL

Dimension(W x H x D) [mm]	370 x 257 x 43.5					
Weight [kg]	4.7					
Cooling concept	Natural convection					
Communication	Built-in Wi-Fi					
Monitoring	Solax Cloud					



M1

Micro Inverter series

REFINED – POWERFUL – FLEXIBLE



High Performance

Low startup voltage,
Wide voltage range,
More efficient.



Easy Installation

Flexible configuration, plug and
play set-up.



IP67 Rated

Engineered to last with
maximum flexibility. Suitable
for outdoor installation.



Remote Monitoring

Monitor your system
remotely via smartphone
app or web portal.

ANYTIME, ANYWHERE REMOTE MONITORING PLATFORM

Monitor system performance in
real-time via smartphone app or
web portal using our advanced
monitoring platform.



For more about the Fox ESS range of inverters, visit:

www.fox-ess.com



TECHNICAL SPECIFICATIONS

MODEL	M1-600	M1-800	M1-1000	M1-1200
INPUT (PV)				
Applicable module power [W]	355Wp-670Wp+			
Peak power tracking voltage [V]	31 ~ 45			
Max. Input Voltage [V]	60			
Start-up voltage [V]	24			
Max. Input Current [A]	20			
Max. Input Short-circuit Current [A]	24			
Number of MPPTs	2			
Number of Strings per MPPT	1			
DC over-voltage protection class	II			
OUTPUT (AC)				
Nominal output power [W]	600	800	1000	1200
Nominal output apparent power [VA]	600	800	1000	1200
Peak output apparent power [VA]	600	800	1000	1200
Nominal output current [A]	2.72	3.64	4.54	5.46
Nominal output voltage/range [V]*1	230/180 ~ 275			
Nominal output frequency [Hz]*1	50/45 ~ 55 or 60/55 ~ 65			
Power Factor	>0.99			
Max. Total Harmonic Distortion [%]	< 3			
Max. units per 10AWG branch*2	11	8	7	5
Max. units per 12AWG branch*2	9	6	5	4
AC over-voltage protection class	III			
EFFICIENCY				
EU Weighted Efficiency [%]	95.50			
CEC Weighted Efficiency [%]	95.50			
Max. Efficiency [%]	96.00			
Nominal MPPT Efficiency [%]	99.90			
GENERAL DATA				
Dimensions (WxHxD) [mm]	270*182*34.5			
Weight [kg]	4.0			
Cooling Method	Natural convection-No fans			
Ingress Protection(according to IEC60529)	IP67			
Max. Operating Altitude [m]	3000			
Operating Ambient Temperature Range [°C]	-25..... +45			
Allowable Relative Humidity Range [%]	1 ~ 100			
Nominal nighttime consumption [mW]	< 50			
Communication	WIFI			
Isolation type	Reinforce Isolation			
Monitoring *3	Fox-ESS Cloud			
STANDARD				
Safety	IEC62109-1/2			
EMC	IEC 61000-6-1 /IEC 61000-6-2 /IEC 61000-6-3 /IEC 61000-6-4 /IEC61000-3-2/IEC61000-3-3			
Cetification	ABNT NBR 16150, EN 50549-1: 2019, VDE-AR-N 4105: 2018, VFR2019			

*1 Nominal voltage/frequency range can vary depending on local requirements.

*2 Refer to local requirements for exact number of microinverters per branch.

*3 Fox ESS Monitoring System.

BluE-G Series

Single Phase / On-grid / 1-3 kW



Max. PV Voltage up to 600 V
DC / AC Ratio up to 1.5



Compatible for Big Capacity PV Panel
WiFi / 4G Plug Optional



Type III DC SPD / Type III AC SPD
IP66 Protection



High Efficiency up to 97.6%
Smaller and Lighter



MODEL	BluE-G 1000S-M1	BluE-G 1500S-M1	BluE-G 2000S-M1	BluE-G 3000S-G2-M1
Input(DC)				
Max. DC Voltage	600 Vdc			
Nominal Voltage	380 Vdc			
Start Voltage ¹⁾	60 V	80 V	80 V	80 V
MPPT Voltage Range	60 V - 560 V	80 V - 560 V	80 V - 560 V	80 V - 560 V
Number of MPPT	1			
Strings Per MPPT	1			
Max. input Current Per MPPT	13 A			
Max. Short-circuit Current Per MPPT	15.6 A			
Output(AC)				
Nominal AC Output Power	1000 W	1500 W	2000 W	3000 W
Max. AC Apparent Power	1100 VA	1650 VA	2200 VA	3300 VA
Nominal AC Voltage	230V L-N			
AC Grid Frequency Range	50Hz / 60Hz ±5Hz			
Max. Output Current (A)	4.8 A	7.2 A	9.6 A	14.4 A
Power Factor (cosΦ)	0.8 leading to 0.8 lagging			
THDi	< 3%			
Efficiency				
Max. Efficiency	97.00%	97.50%	97.50%	97.60%
Euro Efficiency	96.50%	97.00%	97.00%	97.00%
Protection devices				
DC Switch	Yes			
Anti-islanding Protection	Yes			
Output Over Current Protection	Yes			
DC Reverse Polarity Protection	Yes			
String Fault Detection	Yes			
DC / AC Surge Protection	DC Type III; AC Type III			
Insulation Detection	Yes			
AC Short Circuit Protection	Yes			
General Specifications				
Dimensions W x H x D	350 x 290 x 120 mm			
Weight	7.3 kg	8 kg	8 kg	8 kg
Environment				
Operating Temperature Range	-25°C ~+ 60°C			
Cooling Type	Natural			
Max. Operating Altitude	4000 m			
Max. Operating Humidity	0 - 100%			
AC Output Terminal Type	Quick Connector			
IP Class	IP66			
Topology	Transformer - less			
Communication Interface	RS-485 / WIFI / 4G			
Display	LCD			
Certification & Standard	EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN 61000-6-4; IEC 62116; IEC 61727; EN 50549-1			

1) Minimum voltage for inverter to start power output.

BluE-G Series

Single Phase / On-grid / 3-8 kW



Max. PV Voltage up to 600 V
DC / AC Ratio up to 1.5



Compatible for Big Capacity PV Panel
WiFi / 4G Plug Optional



Type III DC SPD / Type III AC SPD
IP65 Protection



High Efficiency up to 98.3%
Smaller and Lighter

MODEL	BluE-G 3600D-M1	BluE-G 4000D-M1	BluE-G 5000D-M1	BluE-G 6000D-M1	BluE-G 8000D
Input(DC)					
Max. DC Voltage	600 V				
Nominal Voltage	380 V				
Start Voltage ⁸⁾	120 V	120 V	120 V	120 V	100 V
MPPT Voltage Range	80 V - 560 V	80 V - 560 V	80 V - 560 V	80 V - 560 V	80 V - 540 V
Number of MPPT	2				
Strings Per MPPT	1				
Max. Input Current Per MPPT	15 A	15 A	15 A	15 A	26 A / 16 A ¹⁾
Max. Short-circuit Current Per MPPT	18 A	18 A	18 A	18 A	31 A / 19 A
Output(AC)					
Nominal AC Output Power	3600 W	4000 W	5000 W ²⁾	6000 W	8000 W
Max. AC Apparent Power	3960 VA ³⁾	4400 VA	5500 VA ⁴⁾	6000 VA	8000 VA
Nominal AC Voltage	230V L-N				
AC Grid Frequency Range	50Hz / 60Hz ±5Hz				
Max. Output Current	17 A ⁵⁾	19 A	24 A ⁶⁾	26 A	35 A
Power Factor (cosΦ)	0.8 leading ~ 0.8 lagging				
THDi	< 3%				
Efficiency					
Max. Efficiency	98.1%	98.3%	98.3%	98.3%	98.3%
Euro Efficiency	97.7%	97.9%	97.9%	97.9%	97.9%
Protection devices					
DC Switch	Yes				
Anti-islanding Protection	Yes				
Output Over Current Protection	Yes				
DC Reverse Polarity Protection	Yes				
String Fault Detection	Yes				
DC / AC Surge Protection	DC: Type III / AC: Type III				
Insulation Detection	Yes				
AC Short Circuit Protection	Yes				
General Specifications					
Dimensions W x H x D	380 x 380 x 150 mm				
Weight	10 kg	11 kg	11 kg	11 kg	13 kg
Operating Temperature Range	-25°C ~+ 60°C				
Cooling Type	Natural			Fan cooling	
Max. Operating Altitude	≤ 4000 m				
Max. Operating Humidity	0 - 100%				
AC Output Terminal Type	Quick Connector				
IP Class	IP65				
Topology	Transformer less				
Communication	RS-485 / WIFI / 4G				
Display	LCD				
Certification & Standard	EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN 61000-6-4; IEC 61683; IEC 60068; IEC 60529; IEC 62116; IEC 61727; EN 50549-1; AS 4777.2; NRS 097; VDE-AR-N-4105; VDE 0126-1-1; CEI 0-21; G98/G99; C10/11; UNE 217001; UNE 217002; NB/T 32004-2018; GB/T 19964-2012; INMETRO ⁷⁾				

1) The maximum current of PV1 is 26 A, So PV1 can be expanded into two Strings by using Y-connectors.

2) Nominal AC output power is 4999 W for Australia and 4600 W for Germany and South Africa.

3) Max. AC apparent power is 3680 VA for the UK.

4) Max. AC apparent power is 4999 VA for Australia, 5000 VA for Belgium and 4600 VA for Germany and South Africa.

5) Maximum output current is 16 A for England.

6) Maximum output current is 21.7 A for Australia and 20 A for Germany and South Africa.

7) For BluE-G 8000D: EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN 61000-6-4; IEC 61683; IEC 60068; IEC 60529; IEC 62116; IEC 61727; INMETRO.

8) Minimum voltage for inverter to start power output.

BlueGlow Series **NEW**

Single Phase / On-grid / 7-12 kW



Max. PV Voltage up to 600 V
Type II DC / Type III AC SPD



Reactive Power Control
WiFi / 4G Plug Optional



DC / AC Ratio up to 1.5
AFCI Optional

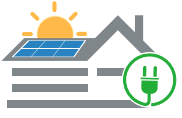


High Efficiency up to 97.5%
Smaller and Lighter



MODEL	G7K	G8K	G9K	G10K	G11K	G12K
Input(DC)						
Max. DC Power	10500	12000	13500	15000	16500	18000
Max. DC Voltage	600 V					
Nominal Voltage	360 V					
Start Voltage	80 V					
MPPT Voltage Range	60 V~ 550 V					
MPPT Voltage Range at full load	170 ~ 480	200 ~ 480	220 ~ 480	250 ~ 480	270 ~ 480	290 ~ 480
Number of MPPT	3					
No. of Strings Per MPPT	1					
No. of Strings Per input	3					
Max. Input Current Per MPPT	15 A*3					
Max. Short-circuit Current Per MPPT	20 A*3					
Output(AC)						
Nominal AC Output Power	7000 W	8000 W	9000 W	10000 W	11000 W	12000 W
Max. AC Apparent Power	7000 VA	8000 VA	9000 VA	10000 VA	11000 VA	12000 VA
Max. AC Output Power	7000 W	8000 W	9000 W	10000 W	11000 W	12000 W
Nominal AC Voltage	220 V					
AC Grid Frequency Range	50 Hz / 60 Hz (±5Hz)					
Rated Output Current	31.8 A	36.4 A	40.9 A	45.5 A	50 A	54.5 A
Maximum Output Current	31.8 A	36.4 A	40.9 A	45.5 A	50 A	54.5 A
Power Factor(Φ)	0.8 leading - 0.8 lagging					
THDi	3%					
Efficiency						
Max. Efficiency	98.1%					
Euro Efficiency	97.5%					
Protection Devices						
DC Switch	Yes					
Output Over Current Protection	Yes					
Anti-islanding Protection	Yes					
DC Reverse Polarity Protection	Yes					
String Fault Detection	Yes					
Overvoltage category	DC Type II; AC Type III					
Insulation detection	Yes					
AC Short Circuit Protection	Yes					
AFCI protection	Option					
General Specifications						
Dimensions W x H x D	380 x 483 x 161 mm			380 x 483 x 193 mm		
Weight	14.5 kg		15 kg		18 kg	
Operating Temperature Range	-25℃ ~+ 60℃					
Cooling Type	Fan Cooling					
Max. Operating Altitude	≤ 4000 m					
Max. Operating Humidity	0 - 100% (No Condensation)					
IP Class	IP66					
Topology	Transformer - less					
Communication	RS-485 / WIFI / GPRS / Bluetooth					
Display	LCD / Bluetooth + App					

* This page is for reference only, please refer to the actual contract. The product will be available in the second quarter of 2024



On-Grid Inverterler

Tek Faz: GT1-3K6/4K/4K6/5K/6K D1

LIVOLTEK GT1-3.6/4.0/4.6/5.0/6.0K-D1 tek fazlı inverterler, konut tipi Güneş Enerji Sistemleri için özel olarak tasarlanmış olup küçük boyutu ile küçük alana ihtiyaç duyar. GT1/D1 Serisi inverterler küçük boyutu ve hafifliği ile bir kişi tarafından kolayca kurulabilir. Invertere isteğe bağlı olarak AFCI DC arıza ark koruma fonksiyonu entegre edilebilir. Bluetooth APP ile inverter yanında izleme yapılabilmekte olup uzaktan izlemeyi de desteklemektedir.

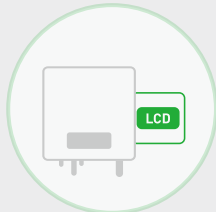


Özellikler

- %150 DC/AC Oranı
- Harici LCD Ekran ile Erişim
- Şebekeye Satış Sınırlandırması (Opsiyonel)
- Mobile App: İzleme ve Optimizasyon
- AFCI-Ark Hatası Tespit Kiti (Opsiyonel)
- Tak-Çalıştır ile Kolay Kurulum
- Verimli Üretim için Artırılabilir %10 AC Çıkış Kapasitesi



Çift MPPT



Harici LCD Ekran



Tak Çalıştır Kurulum ile Zaman Kazandırır



Şebekeye Satış Oranı Belirleme

Uyumlu Ürünler



LCD Ekran



PSD200-FI Dongle



Enerji Metre



İzleme Sistemleri

Teknik Özellikler

Model	GT1-3K6D1	GT1-4KD1	GT1-4K6D1	GT1-5KD1	GT1-6KD1
Giriş (PV)					
Maks. DC Giriş Gücü	5400Wp	6000Wp	6900Wp	7500Wp	9000Wp
Maks. DC Giriş Voltajı	550V				
Minimum PV Giriş Voltajı	70V				
Başlatma DC Giriş Voltajı	90V				
Nominal DC Giriş Gerilimi	360V				
MPPT Çalışma Aralığı	70-545V				
Maks. DC Giriş Akımı	14A+14A				
Maks. Kısa Devre Akımı	20A+20A				
MPPT Sayısı / Dizi Sayısı	2/1				
Çıkış (Grid)					
Nominal Çıkış Gücü	3600W	4000W	4600W	5000W	6000W
Maks. Görünür Çıkış Gücü	3960VA	4400VA	4600VA	5500VA	6600VA
Nominal AC Şebeke Çıkış Akımı	15.7A	17.4A	20.0A	21.7A	26.1A
Maks. AC Çıkış Akımı	17.2A	19.1A	20.0A	23.9A	28.7A
AC Şebeke Gerilimi	220V/230V/240V, L+N+PE				
AC Şebeke Voltaj Aralığı	160V-300V (Ayarlanabilir)				
Nominal Şebeke Frekansı	50Hz/60Hz				
Şebeke Frekans Aralığı	45Hz-55Hz/55Hz-65Hz (Ayarlanabilir)				
Güç Faktörü	> 0.99 Rated Power (Adjustable 0.8 Leading - 0.8 Lagging)				
Çıkış THDi (@Nominal Çıkış)	<3%				
Verimlilik					
Maks. Verimlilik	98.2%	98.2%	98.4%	98.4%	98.4%
AB Verimliliği	97.3%	97.3%	97.5%	97.5%	97.5%
MPPT Verimliliği	>99%				
Koruma					
Dalgalanma Koruması	Type III / Type II (Opsiyonel)				
PV Akım Tespiti	Evet				
Aşırı Akım Koruması	Evet				
AC Kısa Devre Koruması	Evet				
Aşırı Gerilim Koruması	Evet				
Adalanma Karşıtı Koruma	Evet				
Toprak Hatası İzleme	Evet				
Kaçak Akım İzleme Ünitesi	Evet				
DC Ters Polarite Koruması	Evet				
AFCI / Ark Koruması	Optional				
Genel Veriler					
Boyutlar (W*H*D)	350*315*176mm				
Ağırlık	12.5kg				
Koruma Derecesi	IP65				
Soğutma	Doğal Konveksiyon				
Çalışma Sıcaklığı Aralığı	-30°C ~ +60°C (Derating at 45°C)				
Tipik Gürültü Emisyonu	<25dB				
Gece Öz Tüketimi	<1W				
Ekran	LED+APP/LCD (Opsiyonel)				
İletişim	RS485(LCD/Meter), Wi-Fi+Bluetooth, DRM				
Topoloji	Transformatörsüz				
Sertifikalar ve Standartlar					
Şebeke Düzenlemesi	IEC61727, IEC62116,EN50549, ABNT NBR 16149, ABNT NBR 16150				
Güvenlik/EMC Standardı	IEC/EN 62109-1/-2, IEC/EN 61000-6-1/-2/-3/-4				
Garanti	5 Yıl/10 Yıl (Opsiyonel)				



On-Grid Inverterler

Tek Faz: GT1-7K/8K/9K/10K T1

LIVOLTEK GT1-7.0/8.0/9.0/10.0K-T1 PV inverterler, yüksek güçlü tek fazlı konut tipi müşteriler için geliştirilmiştir. GT1/T1 serisi inverterler, aynı zamanda küçük ticari ve endüstriyel projelerde de kullanılabilir. 16A PV giriş akımıyla, yüksek verimliliğe sahip büyük panel kullanımı için uygundur. İsteğe bağlı yerleşik SPD II modülü, harici kurulum işçiliğini ve kablo maliyetlerini etkili bir şekilde azaltmaktadır. Bluetooth APP ile inverter yanında izleme yapılabilmekte olup uzaktan izlemeyi de desteklemektedir.

Özellikler

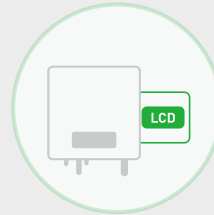
- %150 DC/AC Oranı
- Harici LCD Ekran ile Erişim
- Şebekeye Satış Sınırlandırması (Opsiyonel)
- Mobile App: İzleme ve Optimizasyon
- AFCI-Ark Hatası Tespit Kiti (Opsiyonel)
- Tak-Çalıştır ile Kolay Kurulum
- Verimli Üretim için Artırılabilir %10 AC Çıkış Kapasitesi



Çift MPPT



%97.5 Verimlilik



Harici LCD Ekran ile Uyumlu



Opsiyonel Dahili Entegre AFCI Modülü

Uyumlu Ürünler



LCD Ekran



PSD200-FI Dongle



Enerji Metre



İzleme Sistemleri

Teknik Özellikler

Model	GT1-7KT1	GT1-8KT1	GT1-9KT1	GT1-10KT1
Giriş (PV)				
Maks. DC Giriş Gücü	10500Wp	12000Wp	13500Wp	15000Wp
Maks. DC Giriş Voltajı	550V			
Minimum PV Giriş Voltajı	120V			
Başlatma DC Giriş Voltajı	90V			
Nominal DC Giriş Gerilimi	360V			
MPPT Çalışma Aralığı	70-545V			
Maks. DC Giriş Akımı	16A+16A+20A			
Maks. Kısa Devre Akımı	25A+25A+30A			
MPPT Sayısı / Dizi Sayısı	3/1			
AC Çıkış Verileri				
Nominal Çıkış Gücü	7000W	8000W	9000W	10000W
Maks. Görünür Çıkış Gücü	7700VA	8800VA	9900VA	11000VA
Nominal AC Şebeke Çıkış Akımı	30.4A	34.8A	39.1A	43.5A
Maks. AC Çıkış Akımı	33.5A	38.3A	43A	47.8A
AC Şebeke Gerilimi	220V/230V/240V, L+N+PE			
AC Şebeke Voltaj Aralığı	160-300V (Ayarlanabilir)			
Nominal Şebeke Frekansı	50Hz/60Hz			
Şebeke Frekans Aralığı	45Hz-55Hz/55Hz-65Hz (Ayarlanabilir)			
Güç Faktörü	> 0.99 Rated Power (Adjustable 0.8 Leading - 0.8Lagging)			
Çıkış THDi (@Nominal Çıkış)	<3%			
Verimlilik				
Maks. Verimlilik	98.20%			
AB Verimliliği	97.50%	97.50%	97.50%	97.50%
MPPT Verimliliği	99.99%	99.99%	99.99%	99.99%
Koruma				
Dalgalanma Koruması	Type III/Type II (Opsiyonel)			
PV Akım Tespiti	Evet			
AC Kısa Devre Koruması	Evet			
Aşırı Gerilim Koruması	Evet			
Adalanma Karşıtı Koruma	Evet			
Toprak Hatası İzleme	Evet			
DC Ters Polarite İzleme	Evet			
Kaçak Akım İzleme Ünitesi	Evet			
Genel Veriler				
Boyutlar (W*H*D)	410*345*186 mm			
Ağırlık	16.8kg			
Koruma Derecesi	IP65			
Soğutma	Doğal Konveksiyon			
Çalışma Sıcaklığı Aralığı	-30 °C~ +60 °C (Derating at 45°C)			
Tipik Gürültü Emisyonu	<25dB			
Gece Öz Tüketimi	<1W			
Ekran	APP+LED, LCD (Opsiyonel)			
İletişim	RS4851(Meter), RS485(LCD/Metre), Wi-Fi+Buletooth, DRM			
Topoloji	Transformatörsüz			
Sertifikalar ve Standartlar				
Şebeke Düzenlemesi	IEC61727, IEC62116, ABNT NBR 16149, ABNT NBR 16150, CQC (NB/T32004)			
Güvenlik	IEC62109-1/-2			
EMC	IEC1000-6-1, IEC61000-6-2, IEC61000-6-3, IEC61000-6-4			
Garanti	5 Yıl/10 Yıl (Opsiyonel)			

NEW FROM SOLAX

X1-MINI G4



X1-MINI G4

0.6kW / 0.7kW / 0.8kW
1.1kW / 1.5kW / 2.0kW
2.5kW / 3.0kW / 3.3kW

Features

Upgraded Performance

- DC Input: 200% oversizing, 16A current, ultra wide MPPT voltage range
- In-built global MPP scan for higher yields

Optimized Monitoring

- 10s level interval of data update(Optional, new WiFi dongle required)
- Multiple interfaces for presenting data

Advanced Safety

- AC/DC built-in Type II SPD (Optional) and I-V curve diagnosis supported
- Support external Rapid Shutdown device (RSD)
- Optional ARC detection (AFCI)
- Built-in export control function

Flexible Adaptability

- Adapt to Home EV Charger Solution
- Mass management and broad extension via Datahub
- Extendable parallel solution via Modbus supported

DC INPUT

Max. PV array input power [Wp]	1200	1400	1600	2200	3000	4000	5000	6000	6600
Max. PV input voltage [V]	450	450	450	450	450	450	550	550	550
Startup voltage [V]	50	50	50	50	50	50	50	50	50
Nominal input voltage [V]	360	360	360	360	360	360	360	360	360
MPP tracker voltage range [V]	40~450	40~450	40~450	40~450	40~450	40~450	40~550	40~550	40~550
No. of MPP trackers / Strings per MPP tracker	1/1								
Max. PV input current [A]	16								
Isc PV Array Short Circuit current [A]	22								

AC OUTPUT

Rated AC output power [W]	600	700	800	1100	1500	2000	2500	3000	3300
Rated AC output current [A]	2.6	3.1	3.5	4.8	6.5	8.7	10.9	13.1	14.4
Max. AC output apparent power [VA]	600	770	800	1210	1650	2200	2750	3300	3300
Max. AC output current [A]	3	3.5	3.7	5.5	7.5	10	12.5	15	15
Nominal AC voltage/AC voltage range [V]**	220/230/240;90~285					220/230/240;90~290			
Nominal AC frequency/AC frequency range [Hz]**	50/60;±5								
Power Factor range	0.8 leading~0.8 lagging								
THDi (Rated power) [%]	<3								

SYSTEM DATA

Max. efficiency [%]	98	98	98	98	98	98	98	98	98
Euro. efficiency [%]	96	96	96	96	97	97	97	97	97
Standby consumption [W] @Night	<1								
Ingress protection	IP66								
Protection class	Class I								
Over voltage category	II (DC),III (AC)								
Operating ambient temperature range [°C]	-25~60								
Max. operation altitude [m]	<4000								
Humidity [%]	0~100								
Typical noise emission [dB]	25								
Storage temperature [°C]	-30~70								
Dimensions (WxHxD) [mm]	290x206x120								
Weight [kg]	5.2	5.2	5.2	5.2	5.2	5.2	5.5	5.5	5.5
Cooling concept	Natural cooling								
Communication interfaces	USB/RS485/DRM, Optional: Meter/CT *								
Optional monitoring dongle	Pocket WiFi/LAN/4G								
Display	2 x LED + LCD(16 x 2) / APP								

PROTECTION

Over/under voltage protection	Yes
DC isolation protection	Yes
Monitoring ground fault protection	Yes
Grid monitoring	Yes
DC injection monitoring	Yes
Back feed current monitoring	Yes
Residual current detection	Yes
Anti-islanding protection	Yes
Over temperature protection	Yes
SPD (DC/AC)	Type II / Type II (Optional)
Arc-fault circuit interrupter (AFCI)	Optional
AC auxiliary power supply (APS)	Optional
DC Switch	Optional

STANDARD

Safety	EN/IEC62109-1/2
EMC	EN61000-6-1/2/3/4; EN61000-3-2/3/11/12
Certification	IEC61727, EN50549, G98/G99, AS 4777.2, VDE4105, CEI 0-21, VFR

* Not included in the package. Please purchase additionally.

** The AC voltage and the frequency range may vary from different country codes

* V1.4. Information may be subject to modify without notice.650.00030.00

NEW FROM SOLAX

X1-BOOST G4



X1-BOOST G4

2.5kW / 3.0kW / 3.3kW / 3.6kW
4.0kW / 4.2kW / 5.0kW / 6.0kW

Features

Superior Performance

- DC Input: 200% oversizing, 16A current, 50V startup voltage
- In-built global MPP scan for higher yield efficiency

User Friendly Monitoring

- 10s level interval of data update(Optional, new WiFi dongle required)
- Quick and easy configuration (WiFi&APP)

Assured Safety & Reliability

- AC/DC built-in Type II SPD (Optional) and I-V curve diagnosis supported
- Optional external RSD (Rapid Shutdown) and integrated DC AFCI protection (Optional)
- In-built export control function

Superb Adaptability

- Home EV Charger and Heat Pump Solution adaptable
- Mass management and broad extension via Datahub
- Master/Slave parallel solution via Modbus supported

DC INPUT

Max. PV array input power [Wp]	6000	6000	6600	7200	8000	8000	10000	12000
Max. PV input voltage [V]	600	600	600	600	600	600	600	600
Startup voltage [V]	50	50	50	50	50	50	50	50
Nominal input voltage [V]	360	360	360	360	360	360	360	360
MPP tracker voltage range [V]	40~560	40~560	40~560	40~560	40~560	40~560	40~560	40~560
No. of MPP trackers / String per MPP tracker	2 / 1							
Max. PV input current[A]	16 / 16							
Isc PV Array Short Circuit current [A]	22 / 22							

AC OUTPUT

Rated AC output power [W]	2500	3000	3300	3680	4000	4200	5000 ^①	6000
Rated AC output current [A]	10.9	13.1	14.4	16	17.4 ^⑥	18.3	21.7	26.1
Max. AC output apparent power [VA]	2750	3300	3630	4048 ^④	4000	4620	5000 ^②	6000
Max. AC output current [A]	12	14.4	15.8	17.6 ^⑤	17.4 ^⑥	20.1	21.7 ^③	27.3
Nominal AC voltage / AC voltage range [V] **	220/230/240;90~290							
Nominal AC frequency / AC frequency range [Hz] **	50/60;±5							
Power Factor range	0.8leading~0.8lagging							
THDi (rated power) [%]	<3							

SYSTEM DATA

Max. Efficiency [%]	98							
Euro. Efficiency [%]	97							
Standby consumption [W] @Night	<3							
Ingress protection	IP66							
Operating ambient temperature range [°C]	-25~60							
Max. operation altitude [m]	4000							
Relative humidity [%]	0~100							
Typical noise emission [dB]	25 ^⑦							
Storage temperature [°C]	-30~70							
Dimensions (W x H x D) [mm]	404x274x146							
Weight [kg]	11							
Cooling concept	Natural cooling							
Communication interfaces	USB/RS485/DRM, Optional: Meter/CT *							
Optional monitoring dongle	Pocket WiFi/LAN/4G							
Display	2 x LED + LCD (16 x 2) / APP							

PROTECTION

Over / under voltage protection	Yes							
DC isolation protection	Yes							
Monitoring ground fault protection	Yes							
Grid monitoring	Yes							
DC injection monitoring	Yes							
Back feed current monitoring	Yes							
Residual current detection	Yes							
Anti-islanding protection	Yes							
Over temperature protection	Yes							
SPD (DC/AC)	Type II / Type II (Optional)							
Arc-fault circuit interrupter (AFCI)	Optional							
AC auxiliary power supply (APS)	Optional							
DC Switch	Optional							

STANDARD

Safety	IEC / EN 62109-1 / -2							
EMC	EN61000-6-1 / 2 / 3 / 4, EN61000-3-2 / 3 / 11 / 12							
Certification	IEC61727, EN50549, G98/G99, AS 4777.2, VDE4105, CEI 0-21, VFR, PPDS, TOR							

① 5000 (4600 for VDE4105, 4999 for AS4777.2) ② 5000 (4600 for VDE4105, 4999 for AS4777.2) ③ 21.7 (20 for VDE4105) ④ 4048 (3680 For G98/G99, TOR and PPDS) ⑤ 17.6 (16 For G98/G99, TOR and PPDS)

⑥ For models with internal fan(Optional), typical noise emission is 30 dB

* Not included in the package. Please purchase additionally; ** The AC voltage and the frequency range may vary from different country codes.

* V1.4. Information may be subject to modify without notice.650.00029.00

YENİ

KSTAR

3-Faz Blue Serisi Evsel EDS

Bütünleşik Enerji Depolamalı Sistemler
CATL Batarya Çözümleri



CATL LFP Batarya Stabil ve Güvenli
Modüler, Paket, Sistem, Üçlü Koruma



Her Faz için Ayarlanabilir Güç
Jeneratör Çalışma Destegi (DI/DO)



Modüler Tasarım Tak ve Çalıştır
Mobil İzleme Uygulaması



%200'e Kadar DC/AC Oranı
On&OFF Grid Şebekeye Paralel Sistem

Batarya Modeli		BLU-E-PACK5.1	
Fiziksel Özellikler		Çalışma	
Batarya tipi	LFP (LiFePO4)	Maks. Şarj / Deşarj Akımı	50A/80A
Sistem Ağırlığı	54KG	Nominal DC Güç	4096W
Ölçüler (W x H x D)	540*490*240mm	Maks. Şarj/Deşarj Güç	2825W/4096W
IP Sınıfı	IP65	Çalışma Sıcaklığı Aralığı	0 to 50°C Şarj -10 to 50°C Deşarj
Garanti	5 Yıl Ürün Garantisi, 10 Yıl Performans Garantisi	Nem	0~%95 (Yoğuşma yok)
Elektriksel Özellikler		BYS	
Enerji Kapasitesi	5.12kWh	Toplam Batarya Sayısı	Maks.8
Kullanılabilir Kapasite	4.6kWh	Kapasite	200/400/600/800Ah
Deşarj Oranı (DoD)	90%	Güç Tüketimi	<2W
Nominal Gerilim	51.2V	İletişim	CAN & RS485
DC Sigorta	125A	İzleme Parametreleri	Sistem Gerilimi, Akım, Hücre Gerilimi, Hücre Sıcaklığı, PCBA Sıcaklığı Ölçümü
Çalışma Gerilim Aralığı	44.8-56.5V	Sertifikalar	
İç direnç	<20mΩ	Güvenlik(Hücre)	Paket: IEC/EN 62619;UN38.3 Hücre: IEC/EN 62619;UN38.3;UL1973
Çevrim Ömrü (Cycle)	10000cycle		

Hibrit İnvertör Modeli	E8KT	E10KT	E12KT
PV String Girişi			
Maks. Sürekli PV Giriş Gücü	16kW	20kW	20kW
Maks. DC gerilimi		1100V	
Nominal Gerilim		720V	
MPPT Gerilim Aralığı		140V-1000V	
MPPT Gerilim Aralığı (Tam Yük)	380V-850V	420V-850V	480V-850V
Başlangıç Gerilimi		200V	
MPPT Sayısı		2	
MPPT Başına String Sayısı		1	
Maks. MPPT Başına Giriş Akımı		15A	
Maks. MPPT Başına Kısa Devre Akımı		20A	
AC Çıkışı (Şebeke)			
Nominal AC Çıkış Gücü	8kW	10kW	12kW
Maks. AC Görünür Güç	8.8kVA	11kVA ²	13.2kVA
Nominal AC Gerilim		400Vac	
AC Şebeke Frekans Aralığı		50 / 60Hz±5Hz	
Nominal Çıkış Akımı	11.6A	14.5A	17.4A
Maks. Çıkış Akımı	12.8A	16A	19.2A
Güç faktörü (cosΦ)		0.8 ileri - 0.8 geri ³	
THDi		< %3	
Batarya Girişi			
Batarya Tipi		LFP (LiFePO4)	
Nominal Batarya Gerilimi	51.2V	51.2V	51.2V
Şarj Gerilim Aralığı		44-58V	
Maks. Şarj Akımı	160A	160A	160A
Maks. Boşaltma Akımı	160A	200A	200A
Batarya Kapasitesi		200/400/600/800Ah	
AC Çıkışı(Backup)			
Nominal AC Çıkış Gücü	7.36kW	9.2kW	9.2kW
Maks. AC Çıkış Gücü	8kVA	10kVA	10kVA
Nominal Çıkış Akımı	10.7A	13.3A	13.3A
Maks. Çıkış Akımı	11.6A	14.5A	14.5A
Nominal Çıkış Gerilimi		400V	
Nominal Çıkış Frekansı		50/60Hz	
Çıkış THDv (@Lineer Yük)		<2% (Lineer Yük)	
Verimlilik			
Maks. PV Verimliliği		%97.60	
Euro. PV Verimliliği		%97.00	
Koruma			
Anti-Adalama Koruması		Evet	
Çıkış Aşırı Akım Koruması		Evet	
DC Ters Polarite Koruması		Evet	
String Hatası İzleme		Evet	
AC/DC Aşırı Gerilim Koruması		DC Tip II;AC Tip III	
İzolasyon Hatası İzleme		Evet	
AC Kısa Devre Koruması		Evet	
Genel Özellikler			
Boyutlar (G x Y x D)		540*980*240mm	
Ağırlık		49kg	
Çalışma Sıcaklığı Aralığı		-25°C~+60°C	
Soğutma Tipi		Doğal konveksiyon	
Maks. Çalışma Rakımı		2000m	
Çalışma Ortam Nemi		0~95% (Yoğuşma Yok)	
IP Sınıfı		IP65	
Topoloji		Batarya İzolasyonu	
İletişim		RS485/CAN2.0/WIFI/4G	
Ekran		LCD/APP	

* 1. İnvertörün güç çıkışını başlatması için minimum voltaj.

* 2. Belçika pazarı için maksimum görünür güç 10KVA'dır.

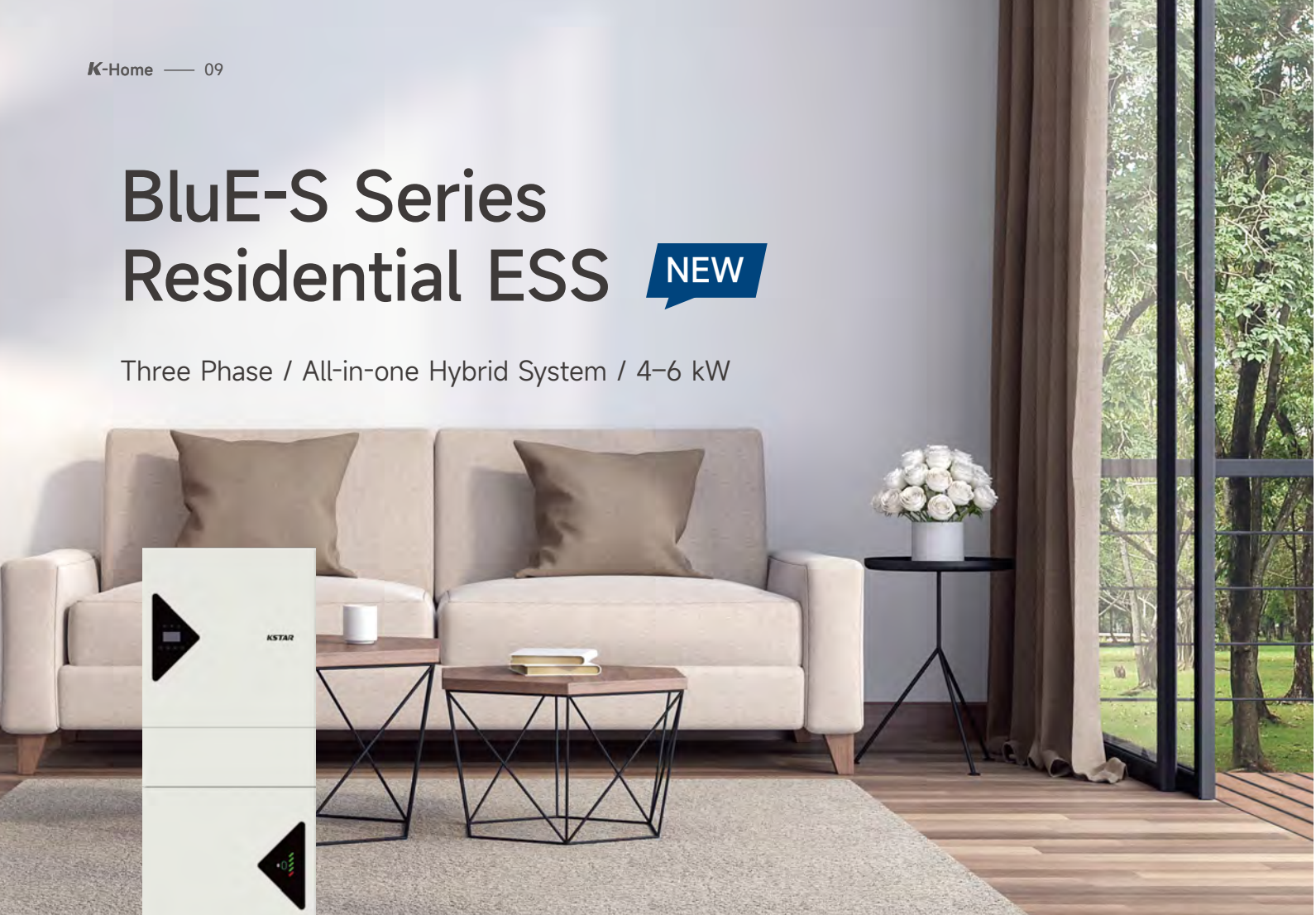
* 3. Almanya için 0,95 önde-0,95 geride.

KSTAR

Stock code: 002518

BluE-S Series Residential ESS NEW

Three Phase / All-in-one Hybrid System / 4–6 kW



Battery Model		BluE-PACK 5.1	
Physical		Operation	
Battery type	LFP (LiFePO4)	Max. Charge/Discharge Current	50 A / 80 A
Weight	54 kg	Rated DC power	4096 W
Dimension (W x H x D)	540 x 490 x 240 mm	Max. Charge/Discharge Power	2825 W / 4096 W
IP Protection	IP65	Operating Temperature Range	-10 to 50°C charging ; -10 to 50°C discharging
Warranty	5 Year Product Warranty, 10 Year Performance Warranty	Humidity	0 ~ 95% (No condensation)
Electrical		BMS	
Energy Capacity	5.12 kWh	Modules Connection	Max.8
Usable Capacity	4.6 kWh	Capacity	100 / 200 / 300 / 400Ah
Depth of Discharge (DoD)	90%	Power Consumption	< 2 W
Nominal Voltage	51.2 V	Communication	CAN & RS-485
DC Circuit Breaker	125 A	Monitoring Parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature measurement
Operating Voltage Range	44.8 - 56.5 V	Certificate	
Internal Resistance	< 20mΩ	Safety(Cell)	Pack: IEC/EN 62619; UN 38.3
Cycle Life	10000 cycle		Cell: IEC/EN 62619; UN 38.3; UL 1973

*All specifications are subject to change without prior notice.

Hybrid Inverter Model	E4KT	E5KT	E6KT
PV String Input			
Max. Continuous PV Input Power	8 kW	10 kW	12 kW
Max. DC Voltage		1000 V	
Nominal Voltage		720 V	
MPPT Voltage Range		140 V - 950 V	
MPPT Voltage Range (Full Load)	300 V - 850 V	320V - 850 V	350 V - 850 V
Start Voltage ¹⁾		200 V	
Number of MPPT		2	
Strings Per MPPT		1	
Max. Input Current Per MPPT		15A	
Max. Short-circuit Current Per MPPT		20 A	
AC Output (Grid)			
Nominal AC Output Power	4 kW	5 kW	6 kW
Max. AC Apparent Power	4.4 kVA	5.5 kVA	6.6 kVA
Nominal AC Voltage		400 Vac	
AC Grid Frequency Range		50 / 60Hz ±5Hz	
Nominal Output Current	5.8 A	7.3 A	8.7 A
Max. Output Current	6.4 A	8 A	9.6 A
Power Factor (cos		0.8 leading - 0.8 lagging	
THDi		<3%	
Battery Input			
Battery Type		LFP (LiFePO4)	
Nominal Battery Voltage	51.2 V	51.2 V	51.2 V
Charging Voltage Range		44 - 58 V	
Max. Charging Current	100 A	100 A	100 A
Max. Discharging Current	100 A	120 A	120 A
Battery Capacity		100 / 200 / 300 / 400 Ah	
AC Output (Backup)			
Nominal AC Output Power	4 kW	5 kW	6 kW
Max. AC Output Power	4 kVA	5 kVA	6 kVA
Nominal Output Current	5.8 A	7.3A	7.3 A
Max. Output Current	5.8 A	7.3 A	7.3 A
Nominal Output Voltage		400 V	
Nominal Output Frequency		50 / 60Hz	
Output THDv (@Linear Load)		< 2% (Linear Load)	
Efficiency			
Max. PV Efficiency		97.60%	
Euro. PV Efficiency		97.00%	
Protection			
Anti-islanding Protection		Yes	
Output Over Current Protection		Yes	
DC Reverse Polarity Protection		Yes	
String Fault Detection		Yes	
AC/DC Surge Protection		DC Type II;AC Type III	
Insulation Detection		Yes	
AC Short Circuit Protection		Yes	
General Specifications			
Dimensions W x H x D		540 x 980 x 240 mm	
Weight		49 kg	
Operating Temperature Range		-25°C ~+ 60°C	
Cooling Type		Natural Convection	
Max. Operation Altitude		2000 m	
Operation Humidity		0 ~ 95% (No Condensation)	
IP Class		IP65	
Topology		Battery Isolation	
Communication		RS-485 / CAN2.0 / WIFI / 4G	
Display		LCD / APP	

1) Minimum voltage for inverter to start power output.

* This page is for reference only. Actual contract shall prevail. The Product will be available in 2024 Q1.

BluE-S Series Residential ESS

Three Phase / All-in-one Hybrid System / 8-12 kW



Battery Model		BluE-PACK 5.1	
Physical		Operation	
Battery Type	LFP (LiFePO4)	Max. Charge/Discharge Current	50 A / 80 A
Weight	54 kg	Rated DC power	4096 W
Dimension (W x H x D)	540 x 490 x 240 mm	Max. Charge/Discharge Power	2825 W / 4096 W
IP Protection	IP65	Operating Temperature Range	-10 to 50°C charging ; -10 to 50°C discharging
Warranty	5 Year Product Warranty, 10 Year Performance Warranty	Humidity	0 ~ 95% (No condensation)
Electrical		BMS	
Energy Capacity	5.12 kWh	Modules Connection	Max. 8
Usable Capacity	4.6 kWh	Capacity	200 / 400 / 600 / 800 Ah
Depth of Discharge (DoD)	90%	Power Consumption	< 2 W
Nominal Voltage	51.2 V	Communication	CAN & RS-485
DC Circuit Breaker	125 A	Monitoring Parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature measurement
Operating Voltage Range	44.8 - 56.5 V	Certificate	
Internal Resistance	< 20 mΩ	Safety(Cell)	Pack: IEC/EN 62619; UN 38.3 Cell: IEC/EN 62619; UN 38.3; UL 1973
Cycle Life	10000 cycle		

*All specifications are subject to change without prior notice.

Hybrid Inverter Model	E8KT	E10KT	E12KT
PV String Input			
Max. Continuous PV Input Power	16 kW	20 kW	20 kW
Max. DC Voltage		1100 V	
Nominal Voltage		720 V	
MPPT Voltage Range		140 V - 1000 V	
MPPT Voltage Range (Full Load)	380 V - 850 V	420 V - 850 V	480 V - 850 V
Start Voltage ¹⁾		200 V	
Number of MPPT		2	
Strings Per MPPT		1	
Max. Input Current Per MPPT		15 A	
Max. Short-circuit Current Per MPPT		20 A	
AC Output (Grid)			
Nominal AC Output Power	8 kW	10 kW	12 kW
Max. AC Apparent Power	8.8 kVA	11 kVA ²⁾	13.2 kVA
Nominal AC Voltage		400 Vac	
AC Grid Frequency Range		50 / 60Hz ±5Hz	
Nominal Output Current	11.6 A	14.5 A	17.4 A
Max. Output Current	12.8 A	16 A	19.2 A
Power Factor (cosΦ)		0.8 leading - 0.8 lagging	
THDi		< 3%	
Battery Input			
Battery Type		LFP (LiFePO4)	
Nominal Battery Voltage		51.2 V	
Charging Voltage Range		44 - 58 V	
Max. Charging Current		160 A	
Max. Discharging Current	160 A	200 A	200 A
Battery Capacity		200 / 400 / 600 / 800 Ah	
AC Output (Backup)			
Nominal AC Output Power	7.36 kW	9.2 kW	9.2 kW
Max. AC Output Power	8 kVA	10 kVA	10 kVA
Nominal Output Current	10.7 A	13.3 A	13.3 A
Max. Output Current	11.6 A	14.5 A	14.5 A
Nominal Output Voltage		400 V	
Nominal Output Frequency		50 / 60 Hz	
Output THDv (@Linear Load)		< 2% (Linear Load)	
Efficiency			
Max. PV Efficiency		97.60%	
Euro. PV Efficiency		97.00%	
Protection			
Anti-islanding Protection		Yes	
Output Over Current Protection		Yes	
DC Reverse Polarity Protection		Yes	
String Fault Detection		Yes	
DC/AC Surge Protection		DC Type II; AC Type III	
Insulation Detection		Yes	
AC Short Circuit Protection		Yes	
General Specifications			
Dimensions W x H x D		540 x 980 x 240 mm	
Weight		49 kg	
Operating Temperature Range		-25°C ~+ 60°C	
Cooling Type		Natural Convection	
Max. Operating Altitude		2000 m	
Operating Humidity		0 ~ 95% (No Condensation)	
IP Class		IP65	
Topology		Battery Isolation	
Communication		RS-485 / CAN 2.0 / WIFI / 4G	
Display		LCD / APP	
Certification & Standard	IEC/EN 62109-1&2; IEC/EN 61000-6-1; IEC/EN 61000-6-2; EN 61000-6-3; IEC/EN 61000-6-4; IEC/EN 61000-3-11; EN 61000-3-12; IEC 60529; IEC 60068; IEC 61683; IEC 62116; IEC 61727; EN 50549-1; VDE-AR-N 4105; C10/11; VDE 0126-1-1; CEI 0-21; NC Rfg; G98; EIFS; NTS&UNE 217001		

1) Minimum voltage for inverter to start power output.

2) According to the C10/11 of Synergrid, the maximum AC output power is 10 kVA and the maximum AC output current is 14.5A.



INTRODUCTION

This is an integrated residential ESS which comes with a 5-15kW hybrid Three-phase inverter and extensible battery modules, plug and play, capacity range from 10 to 30 kWh. It has excellent performance in economy, safety and robustness. In addition, intelligent functions like VPP, micro-grid, smart schedule and smart scene are all ready. It would be the best choice for householders.

SolaX IES

◀ Features

Economic

- All in one design, plug and play, expandable and installation easily
- Maximum 200% oversize and 200% PV input power
- Maximum 20A DC single string input current, support high power solar panel
- Low start output voltage makes inverter longer working time
- Built-in shadow tracking function

Safe

- IP66 protection level
- AC&DC SPD type II, always guarding the inverter
- AFCI optional

Robust

- Robust back-up ability, switchover time <10ms(UPS level) , up to 200% EPS output for 10s, support half-wave loads
- Battery heating technology, -30°C extreme environment operation

Intelligent

- AI ready, forecasting solar generation and home consumption, smart energy management strategy
- VPP ready, SolaX cloud support resource aggregator(2030.5, OpenADR)
- Micro-grid ready, supporting a variety of scenarios, both on-grid and off-grid, balancing power between PCS and Hybrid in real time.
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- Support 7×24h scheduling mode
- Support Wireless meter solution

SYSTEM OVERVIEW

System schematic



Rated output power [kW]	5 / 6 / 8 / 10 / 12 / 15				
Number of batteries	2	3	4	5	6
Normal capacity [kWh] ^①	10.2	15.3	20.4	25.6	30.7
Usable energy [kWh] ^②	9.2	13.8	18.4	23.0	27.6
Max. charge / discharge power [kW] ^③	10.2	15	15	15	15
Degree of protection	IP66				
Operating temperature range [°C]	-30 to 53				
Allowable relative humidity range [%]	5-95 (No condensation)				
Max. operating altitude [m]	3000				
Net weight [kg] ^④	144.2	191.2	144.2 / 100.5	144.2 / 147.5	191.2 / 147.5
Dimension (W x H x D) [mm]	730 x 1281 x 209.5	730 x 1599 x 209.5	730 x 1281 x 209.5/ 730 x 809 x 150	730 x 1281 x 209.5/ 730 x 1127 x 150	730 x 1599 x 209.5/ 730 x 1127 x 150
Display	LCD				
Cooling concept	Natural cooling				
Topology	Transformerless				
Communication	RS485, Pocket-X, USB, CAN, DO, DI				

① Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge.

② System usable energy may vary with inverter different setting.

③ The max.charge/discharge power must not exceed the rated output power (the table takes the maximum power inverter as an example).

④ Different inverter models have different weights. The heaviest one is taken as an example.

SPECIFICATIONS

X3-IES-5K

X3-IES-6K

X3-IES-8K

X3-IES-10K

X3-IES-12K

X3-IES-15K

INPUT PV

Max. recommended PV array power [W]	10000	12000	16000	20000	24000	30000
Max. DC voltage [V]	1000					
Nominal DC operating voltage [V]	600					
Max. input current (input PV1 / input PV2) [A]	PV1: 20 / PV2: 20	PV1: 20 / PV2: 20	PV1: 32 / PV2: 20	PV1: 32 / PV2: 20	PV1: 32 / PV2: 20	PV1: 32 / PV2: 20
Max. short circuit current (input PV1 / input PV2) [A]	PV1: 25 / PV2: 25	PV1: 25 / PV2: 25	PV1: 40 / PV2: 25	PV1: 40 / PV2: 25	PV1: 40 / PV2: 25	PV1: 40 / PV2: 25
MPPT voltage range [V]	110 to 950					
Start output voltage [V]	140					
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)	2 / (1 / 1)	2 / (2 / 1)	2 / (2 / 1)	2 / (2 / 1)	2 / (2 / 1)

INPUT AC

Normal AC power [VA]	10000	12000	16000	20000	20000	20000
Max. AC current [A]	16.1	19.3	25.8	32.0	32.0	32.0
Rated grid Frequency [Hz]	50 / 60					
Power factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)					

OUTPUT AC(On-Grid)

Nominal AC power [VA]	5000	6000	8000	10000 (AS4777 9999)	12000	15000
Max. apparent AC power [VA]	5500	6600	8800	10000 (AS4777 9999)	13200	16500
Rated grid voltage(AC voltage range) [V]	3P4W, 380 / 400					
Rated grid Frequency [Hz]	50 / 60					
Rated AC Output Current [A] (at 230V, 50Hz)	7.3	8.7	11.6	14.5	17.4	21.8
Max. AC current [A]	8	9.6	12.8	14.5	19.2	24.0
Displacement power factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)					
Total harmonic distortion (THDi, rated power) [%]	< 3					

EPS OUTPUT(With Battery)						
EPS peak power [VA]	2Pn, 10s (Full sun)	2Pn, 10s (Full sun)	2Pn, 10s (Full sun)	2Pn, 10s (Full sun)	2Pn, 10s (Full sun)	2Pn, 10s (Full sun)
EPS rated power [VA]	5000	6000	8000	10000	12000	15000
EPS rated voltage [V], Frequency [Hz]	3P4W, 380 / 400, 50/60					
EPS rated current [A]	7.3	8.7	11.6	14.5	17.4	21.8
Switchover time [ms]	< 10					
Total harmonic distortion (THDv, linear Load) [%]	< 3					
Max. half wave loads [kW]	2					
BATTERY						
Battery voltage range [V]	160 ~ 800					
Max. charge / Discharge current [A]	50					
Communication interfaces	CAN / RS485					
BMS module	TBMS-MCS0800E					
Battery module	TP-HS50E					
Composition	TBMS-MCS0800E + TP-HS50E * n + Base Dimensions + Series Box (Required for two columns)					
Battery type	Li-ion (LFP)					
Norminal capacity [kWh] / Nominal capacity [Ah] ^①	5.1 / 50					
Usable energy [kWh] ^②	4.6					
Standard power [kW]	3					
Max power [kW]	5.1					
Max. charge / discharge current [A] ^③	50					
Cycle life [Cycles]	> 6000					
Warranty [Years]	10					
Safety	CE, RCM, TUV (IEC62619), RoHS, REACH					
TBMS-MCS0800E dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 165 / 9.3					
TP-HS50E dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 318 / 47					
Base dimensions(L x W x H) [mm] / Weight [kg]	730 x 150 x 75 / 3.9					
Series box dimensions(L x W x H) [mm] / Weight [kg]	167 x 121 x 91.5 / 1.3					
EFFICIENCY						
Max. efficiency [%] / Euro-efficiency [%]	98/ 97.7					
Rated battery charge [%] / Discharge efficiency [%]	98.5 / 97					
GENERAL DATA (Inverter)						
Demensions (W/H/D) [mm]	717 x 405 x 209.5					
Weight [kg]	37					
Operating temperature range [°C]	– 35 to 60 (derating at +45)					
Relative humidity [%]	0 to 100 (condensing)					
Storage temperature [°C]	– 40 to 65					
Noise emission (typical) [dB(A)]	< 31					
Internal consumption (night) [W]	< 40 for hot standby, < 5 for cold standby					
Idle mode	Yes					
PROTECTION						
Anti-Islanding protection	Yes					
DC reverse polarity protection	Yes					
Insulation monitoring	Yes					
Residual current monitoring	Yes					
AC overcurrent protection	Yes					
AC short-circuit protection	Yes					
AC overvoltage protection	Yes					
Over-heat protection	Yes					
AFCI	OPT					
Surge protection	Type II , DC and AC					
STANDARD						
Safety	IEC62109-1 / ICE62109-2					
EMC	EN 61000-6-1 / EN 61000-6-2 / EN 61000-6-3					
Certification	VDE 0126-1-1 A1:2012 / VDE-AR-N 4105 /G98/G99/ AS4777 / EN50549/ CEI 0-21					

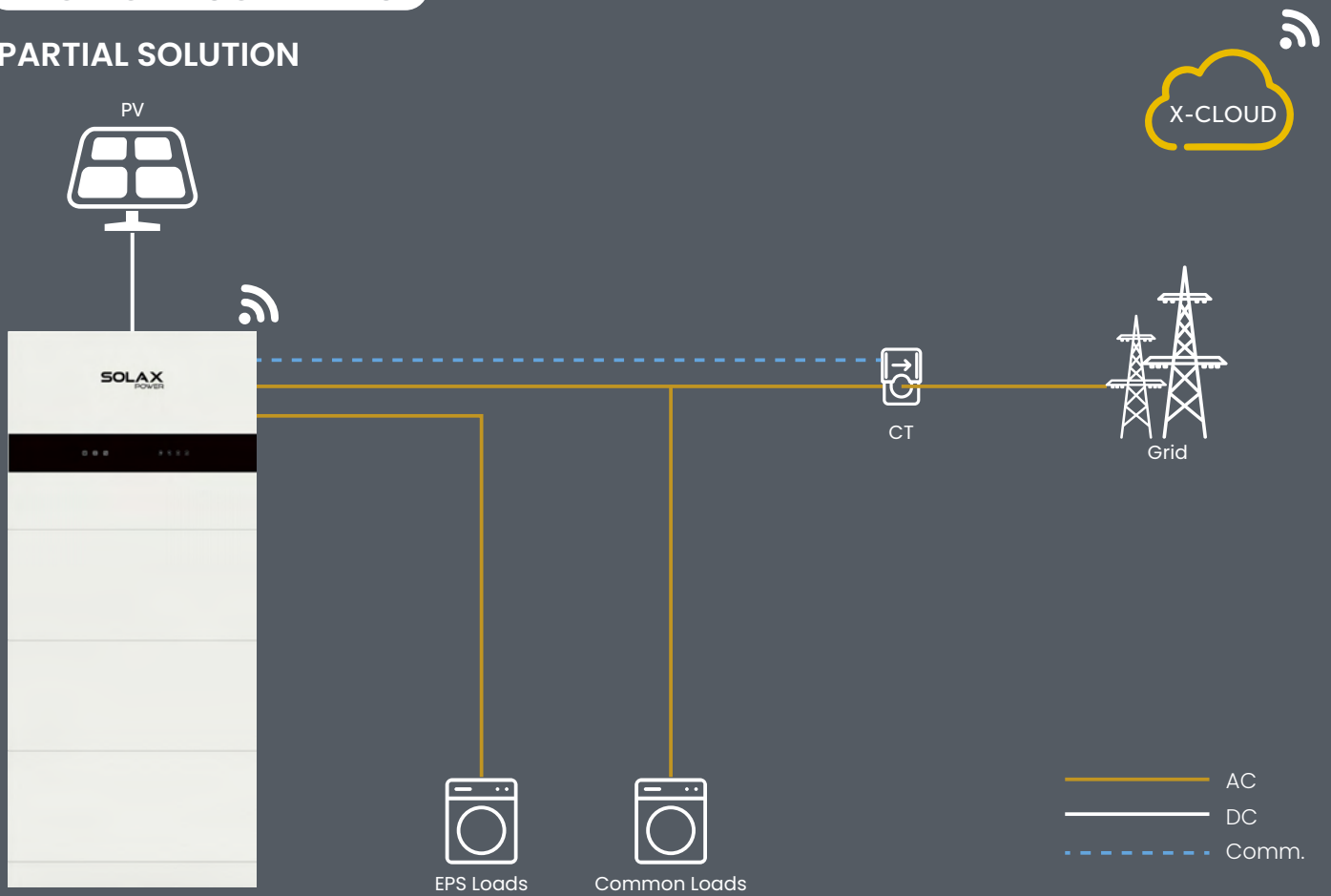
① Test conditions: 25°C, 100% depth of discharge (DoD), 0.2C charge & discharge.

② System usable energy may vary with inverter different setting.

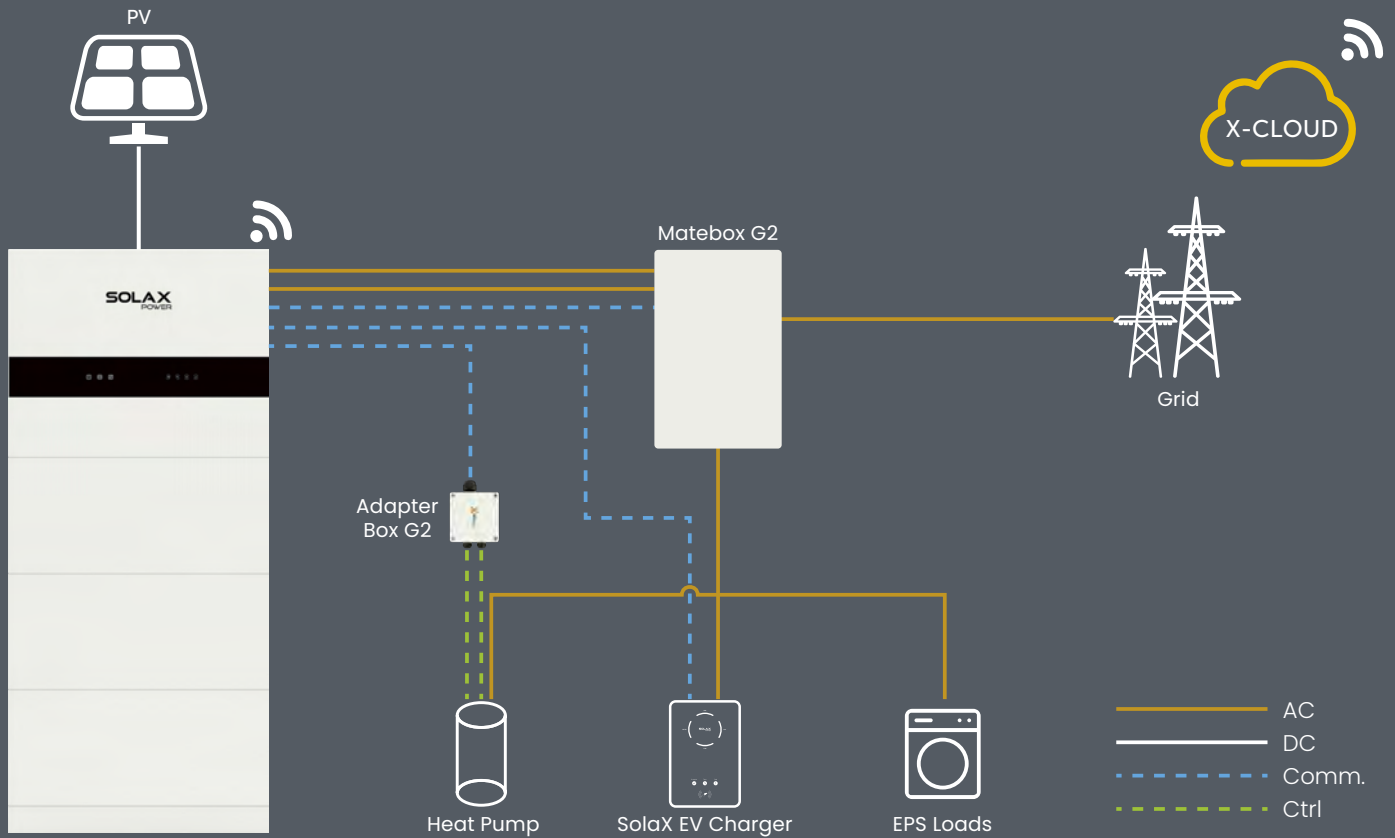
③ Discharge: In case of battery cell's temperature range of -20°C~10°Cand 45°C~53 °C,the discharge current will be reduced; Charge: In case of battery cell's temperature range of 0°C~25°C and 45°C~53°C, the charge current will be reduced. Product charge or discharge power depends on the actual temperature of battery pack.

TACTICAL SCENARIO

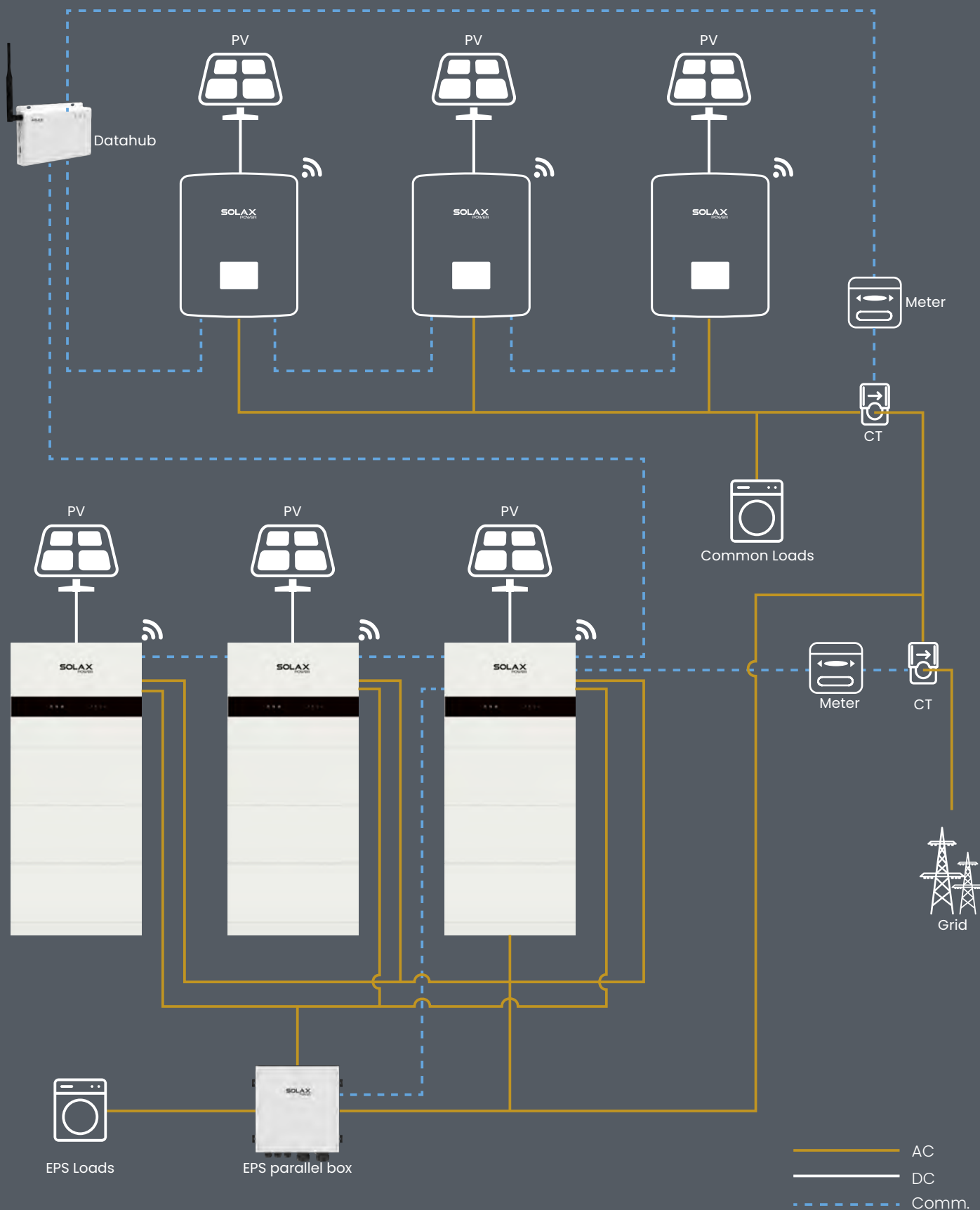
PARTIAL SOLUTION



WHOLE HOME BACKUP SOLUTION



0 INJECTION SOLUTION



Konut Tipi 3-Faz G Serisi Enerji Depolama Sistemleri



İnvertör Özellikleri	PRESS-G1015	PRESS-G1020	PRESS-G1025	PRESS-G1030	PRESS-G1035	PRESS-G1040
Maks. Verimlilik	97.9% (PV-AC), 98.0% (BAT-AC)					
[PV] Maks. Gücü	15000W					
[PV] Maks. Gerilim	1000V					
[PV] MPPT Gerilim Aralığı	160V-950V					
[PV] Maks. Giriş Akımı	20A/30A					
[PV] MPPT Sayısı	2 (1+2 dizi)					
[BATARYA] Gerilim Aralığı	120V-600V					
[BATARYA] Maks. Şarj/Deşarj Gücü	15000W / 11300W					
[BATARYA] Maks. Şarj/Deşarj Akımı	50A / 50A					
[AC] Nominal Çıkış Gücü	10000W					
[AC] Nominal Gerilim	380V/400V/415, 3L+N+PE					
[AC] Gerilim Aralığı	260V-520V (Ayarlanabilir)					
[AC] Maks. Çıkış Akımı	3 * 16.7A					
[AC] Frekans Aralığı	45Hz-55Hz / 55Hz-65Hz (Ayarlanabilir)					
[AC] THDI	<5% (Nominal Güç)					
Arayüz / Haberleşme	Ekran, CAN					
Garanti	10 Yıl					
Paralel Bağlantı	Yok					
Batarya Özellikleri						
Batarya Tipi	LiFePO ₄ - Prizmatik					
Nominal Gerilim	153.6V	204.8V	256V	307.2V	358.4V	409.6V
Çalışma Gerilim Aralığı	132V - 170V	176V - 227V	220V - 284V	264V - 340V	308V-397V	352V-454V
Nominal Kapasite	100Ah					
Nominal Enerji Kapasitesi	15.36kWh	20.48kWh	25.60kWh	30.72kWh	35.84kWh	40.96kWh
Standart Şarj/Deşarj Akımı	50A					
Maks. Sürekli Çıkış Akımı	50A					
Döngü Ömrü (*)	≥6000 döngü					
Şarj Sıcaklığı	0~50°C					
Deşarj Sıcaklığı (**)	-10~55°C					
Depolama Sıcaklığı	-20~55°C					
Paralel Bağlantı	Yok					
Mekanik Özellikler						
Koruma Seviyesi	IP65					
Boyut (ExDxY)	683x455x1330 mm	683x455x1480 mm	683x455x1630 mm	683x455x1780 mm	683x455x1930 mm	683x455x2080 mm
Ağırlık	244 ± 5 kg	296 ± 5.5 kg	348 ± 6 kg	400 ± 6.5 kg	452 ± 7 kg	504 ± 7.5 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

Konut Tipi 3-Faz A ve D Serisi Enerji Depolama Sistemleri



İnvertör Özellikleri	PRESS-A1012	PRESS-D1210
Maks. Verimlilik	97.9% (PV-AC), 98.0% (BAT-AC)	97% (PV-AC)
[PV] Maks. Gücü	15000W	15600W
[PV] Maks. Gerilim	1000V	800V
[PV] MPPT Gerilim Aralığı	160V-950V	200V-650V
[PV] Maks. Giriş Akımı	20A/30A	26A/13A
[PV] MPPT Sayısı	2 (1+2 dizi)	2 (2+1 dizi)
[BATARYA] Gerilim Aralığı	120V-600V	40V-60V
[BATARYA] Maks. Şarj/Deşarj Gücü	15000W / 11300W	12000W / 12000W
[BATARYA] Maks. Şarj/Deşarj Akımı	50A / 50A	240A / 240A
[AC] Nominal Çıkış Gücü	10000W	12000W
[AC] Nominal Gerilim	380V/400V/415, 3L+N+PE	380V/400V, 3W+N+PE
[AC] Gerilim Aralığı	260V-520V (Ayarlanabilir)	—
[AC] Maks. Çıkış Akımı	3 * 16.7A	3 * 26.1A
[AC] Frekans Aralığı	45Hz-55Hz / 55Hz-65Hz (Ayarlanabilir)	50/60Hz
[AC] THDI	<3% (Nominal Güç)	<3% (Nominal Güç)
Arayüz / Haberleşme	Screen, WIFI, LAN	Screen, CAN
Garanti	10 Yıl	
Paralel/Seri Bağlantı	Yok	
Batarya Özellikleri		
Batarya Tipi	LiFePO ₄ - Prizmatik	
Nominal Gerilim	128V	51.2V
Çalışma Gerilim Aralığı	112V-140V	44V - 56.8V
Nominal Kapasite	100Ah	
Nominal Enerji Kapasitesi	12.8kWh	10.24kWh
Standart Şarj/Deşarj Akımı	50A	100A
Maks. Sürekli Çıkış Akımı	50A	200A
Döngü Ömrü (*)	≥6000 döngü	
Şarj Sıcaklığı	0~50°C	
Deşarj Sıcaklığı (**)	-10~55°C	
Depolama Sıcaklığı	-20~55°C	
Paralel Bağlantı	Yok	
Seri Bağlantı	Var (en fazla 2 batarya paketi)	
Mekanik Özellikler		
Koruma Seviyesi	IP65 (Batarya / Dahili İnvertör)	IP65 Inv + IP20 Batarya
Soğutma	Doğal Soğutma	Smart (Basınçlı Soğutma)
Boyut (ExDxY)	648x275x1925 mm	648x200x990 mm (Sadece Batarya)
Ağırlık	182 ± 2 kg	135 ± 5 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

RESIDENTIAL BATTERY SOLUTIONS



Energy
Independence



Environmental
Benefits



Power Outage
Protection

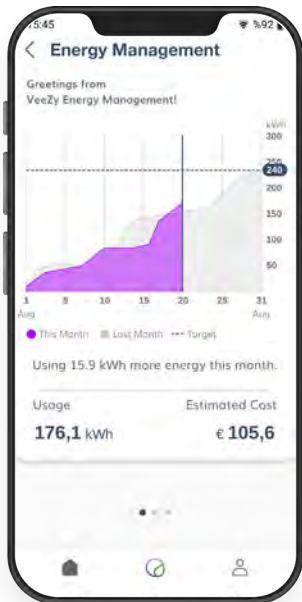


BILL MANAGEMENT

Lower your utility bills by harnessing and storing energy during low-cost hours for usage in high rate periods. Furthermore, the Vestel Residential Battery offers a practical way to capitalize on your solar panel installation, enabling you to utilize the energy generated more efficiently.



Vestel as a Full Solution Supplier



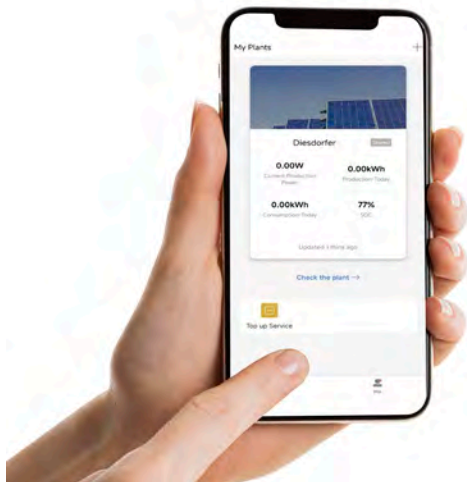
BATTERY MANAGEMENT APP

Battery Management app allows you to prioritize the energy sources to the main load like PV, battery or grid. Also with the app, you can prioritize of consumptions from the energy resources like main load, battery or grid. You may also define the priority for the resource to charge the battery, from PV or grid. Application has 2 accounts, one for end users to monitor all power battery functionalities, energy production and consumption data and one for installers to easily connect and make the settings of battery

Mobile App allows users;

- Monitor their energy usage in real-time
- Adjust settings to optimize their battery system's performance
- Receive notifications when their battery is running low or requires maintenance.
- Access historical energy data to identify trends and make informed decisions about energy usage.
- Cost saving by monitoring your energy usage and adjusting settings to optimize performance, homeowners can save money on their energy bills.
- Reduce environmental impact and contribute to a more sustainable future.

Vestel as a Full Solution Supplier



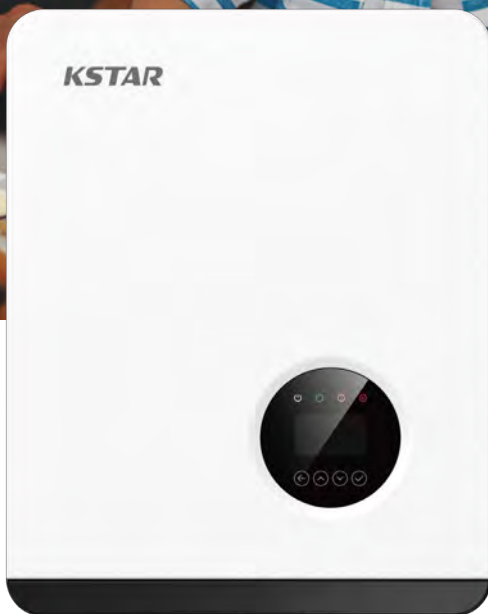
ALL IN ONE RBS SYSTEM SPECIFICATIONS

Items	Specifications
INVERTER	
No. of phases	Singla Phase - Three Phase
Protection Class	Class I
Uninterrupted Power Supply (UPS)	Yes
Max. cont. SYSTEM DISCHARGE Power [kW]	15
BATTERY MODULES	
Nominal Voltage [V]	102.4 - 409.6V
Modular System (yes/no)	Yes
Maximum System Capacity [kWh]	30,0
Module Capacity [kWh]	5kWh
Module Weight [kg]	55,0
Max. cont. CHARGE Power [kW]	min. 2.5kW up to 15kW
Max. cont. MODULE DISCHARGE Power [kW]	min. 2.5kW up to 15kW
Operating Temperature	-20°C to +55°C
CERTIFICATIONS	
Thermal Runaway	UL9540A
EMC	IEC/EN 61000-6-1/-2/-3/-4
Inv. Safety	IEC62109-1/-2
Embedded SW	UL1998
Solid-State Devices	UL991
Transport	UN38.3
R-ESS Safety	VDE-AR-E2510-50
Lithium System Safety	IEC62619
GridCodes - VDE-AR-N-4105	Yes
ENERGY MANAGEMENT SYSTEM	
Smart Home Integration	Yes
Other App	Yes
OTHERS	
Remote Firmware Update (OTA) possible	Yes
Max. System Capacity [kWh]	30
IP-Rating	IP65
Installation Type	Wall-mounted
System Dimensions (H*W*D)	840 x 800 x 160 mm (10kWh 2 modules option)
Connectivity Options	WiFi, Ethernet
Supported Protocols	Modbus, RS485, CAN
System Warranty	5 Years



BluE Series

Three Phase / On-grid / 3-12 kW



Max. PV Voltage up to 1100 V
Type II DC / AC SPD



Compatible for Big Capacity PV Panel
WiFi / 4G Plug Optional



DC / AC Ratio up to 2
IP66 Protection



High Efficiency up to 98.6%
Smaller and Lighter

MODEL	BluE-3KT-M1	BluE-4KT-M1	BluE-5KT-M1	BluE-6KT-M1	BluE-8KT-M1	BluE-10KT-M1	BluE-12KT-M1
Input(DC)							
Max. DC Voltage	1100 V						
Nominal Voltage	650 V						
Start Voltage ¹⁾	250 V						
MPPT Voltage Range	140 V ~ 1000 V						
Number of MPPT	2						
Strings Per MPPT	1						
Max. Input Current Per MPPT	15 A						
Max. Short-circuit Current Per MPPT	20 A						
Output(AC)							
Nominal AC Output Power	3000 W	4000 W	5000 W	6000 W	8000 W	10000 W	12000 W
Maximum AC Output Power	3300 VA	4400 VA	5500 VA	6600 VA	8800 VA	11000 VA ²⁾	13200 VA
Nominal AC Voltage	400 V 3L+N						
AC Grid Frequency Range	50 / 60Hz (±5Hz)						
Maximum Output Current	4.8 A	6.4 A	8.0 A	9.6 A	12.8 A	16.0 A ²⁾	19.2A
Power Factor(Φ)	0.8 leading - 0.8 lagging						
THDi	3%						
Efficiency							
Max. Efficiency	98.4%	98.4%	98.4%	98.4%	98.6%	98.6%	98.6%
Euro Efficiency	97.5%	97.5%	97.5%	97.5%	98.0%	98.1%	98.1%
Protection devices							
DC Switch	Yes						
Output Over Current Protection	Yes						
Anti-islanding Protection	Yes						
DC Reverse Polarity Protection	Yes						
String Fault Detection	Yes						
DC / AC Surge Protection	DC: Type II / AC: Type III / Type II Optional						
Insulation Detection	Yes						
AC Short Circuit Protection	Yes						
General Specifications							
Dimensions W x H x D	380 x 483 x 161 mm						
Weight	< 17 kg						
Operating Temperature Range	-25°C ~+ 60°C						
Cooling Type	Natural cooling						
Max. Operating Altitude	4000 m						
Max. Operating Humidity	0 - 100% (No condensation)						
AC Output Terminal Type	Connector						
IP Class	IP66						
Topology	Transformer - less						
Communication	RS-485 / Wifi / 4G						
Display	LCD						
Certification & Standard	EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN6 1000-6-4; IEC 61683; IEC 60068; IEC 60529; IEC 62116; IEC 61727; EN 50549-1; VDE-AR-N-4105; VDE 0126-1-1; CEI 0-21; G98/G99; C10/11; NB/T 32004-2018; GB/T 19964-2012						

1) Minimum voltage for inverter to start power output.

2) According to the C10/11 of Synergrid, the maximum AC output power is 10 kVA and therefore the maximum AC output current is 14.5A.

BluE Series

Three Phase / On-grid / 15-25 kW



Max. PV Voltage up to 1100 V
Type II DC / AC SPD



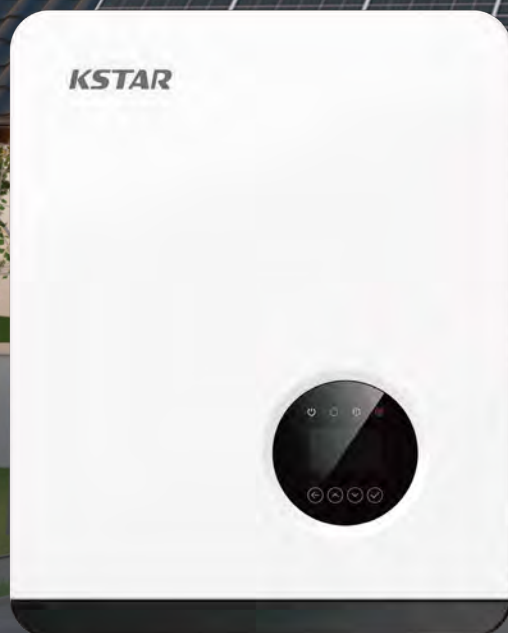
Compatible for Big Capacity PV Panel
WiFi / 4G Plug Optional



DC / AC Ratio up to 2
IP66 Protection



High Efficiency up to 98.6%
Smaller and Lighter



MODEL	BluE-15KT-M1	BluE-17KT-M1	BluE-20KT-M1	BluE-25KT-M1
Input(DC)				
Max. DC Voltage	1100 V			
Nominal Voltage	650 V			
Start Voltage	250 V			
MPPT Voltage Range	140 V ~ 1000 V			
Number of MPPT Tracker	2			
Strings Per MPPT Tracker	2 / 1	2	2	2
Max. input Current Per MPPT	30 A / 15 A	30 A	30 A	30 A
Max. Short-circuit Current Per MPPT	40 A / 20 A	40 A	40 A	40 A
Output(AC)				
Nominal AC Output Power	15000 W	17000 W	20000 W	25000 W
Max. AC Output Power	16500 VA	18700 VA	22000 VA	27500 VA
Nominal AC Voltage	400 V 3L+N			
AC Grid Frequency Range	50 Hz / 60 Hz ±5Hz			
Max. Output Current	23.9 A	27.1 A	31.9 A	39.9 A
Power Factor (cosΦ)	0.8 leading to 0.8 lagging			
THDi	3%			
Efficiency				
Max. Efficiency	98.6%			
Euro Efficiency	98.2%	98.3%	98.3%	98.3%
Protection Devices				
DC Switch	Yes			
Anti-islanding Protection	Yes			
Output Over Current Protection	Yes			
DC Reverse Polarity Protection	Yes			
String Fault Detection	Yes			
AC/DC Surge Protection	DC: Type II / AC: Type III / Type II Optional			
Insulation Detection	Yes			
AC Short Circuit Protection	Yes			
General Specifications				
Dimensions W x H x D	380 x 483 x 193 mm			
Weight	20.7 kg			
Operating Temperature Range	-25°C ~+ 60°C			
Cooling Type	Fan Cooling			
Max. Operating Altitude	4000 m			
Max. Operating Humidity	0 - 100% (No condensation)			
AC Output Terminal Type	Connector			
IP Class	IP66			
Topology	Transformer - less			
Communication Interface	RS-485 / WIFI / 4G			
Display	LCD			
Certification & Standard	EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN 61000-6-4; IEC 61683; IEC 60068; IEC 60529; IEC 62116; IEC 61727; EN 50549-1; VDE-AR-N-4105; VDE 0126-1-1; CEI 0-21; G99; C10/11; NB/T 32004-2018; GB/T 19964-2012			

KSG Series

Three Phase / On-grid / 25-40 kW



Max. PV Voltage up to 1100 V
Type II DC / AC SPD



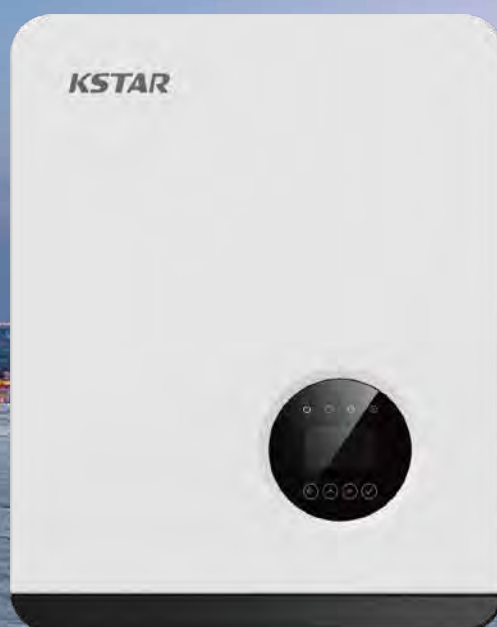
Compatible for Big Capacity PV Panel
WiFi / 4G Plug Optional



DC / AC Ratio up to 1.5
IP66 Protection



High Efficiency up to 98.7%
Smaller and Lighter



MODEL	KSG-25KT-M1		KSG-30KT-M1	KSG-40KT-M1
Input (DC)				
Max. DC Voltage	1100 V			
Nominal Voltage	650 V			
Start Voltage	250 V			
MPPT Voltage Range	140 V ~ 1000 V	200 V ~ 1000 V	200 V ~ 1000 V	
Number of MPPT Tracker	2	3	3	
Strings per MPPT Tracker	2			
Max. input Current per MPPT	30 A			
Max. Short-circuit Current per MPPT	40 A			
Output (AC)				
Nominal AC Output Power	25000 W	30000 W	40000 W	
Max. AC Apparent Power	27500 VA	33000 VA	44000 VA	
Nominal AC Voltage	230 / 400 V, 3P+N+PE			
AC Grid Frequency Range	50 / 60 Hz (±5Hz)			
Max. Output Current	39.9 A	47.8 A	63.8 A	
Power Factor (cosΦ)	0.8 leading - 0.8 lagging			
THDi	3%			
Efficiency				
Max. Efficiency	98.6%	98.7%	98.7%	
Euro Efficiency	98.3%	98.4%	98.4%	
Protection Devices				
DC Switch	Yes			
Output Over Current	Yes			
Anti-islanding Protection	Yes			
DC Reverse Polarity Protection	Yes			
String Fault Detection	Optional			
DC / AC Surge Protection	DC Type II; AC Type III; Type II Optional			
Insulation Detection	Yes			
AC Short Circuit Protection	Yes			
General Specifications				
Dimensions (W x H x D)	380 x 483 x 193 mm	380 x 483 x 223 mm	380 x 483 x 227 mm	
Weight	20.7 kg	25.5 kg	32.5 kg	
Operating Temperature Range	-25°C ~+ 60°C			
Cooling Type	Fan cooling			
Max. Operating Altitude	4000 m			
Max. Operating Humidity	0 - 100% (No condensation)			
AC Output Terminal Type	Connector			
IP Class	IP66			
Topology	Transformerless			
Communication	RS-485 / Wifi / 4G			
Display	LCD			
Certification & Standard	EN/IEC 62109-1/2; IEC/EN 61000-6-2; IEC/EN 61000-6-4; IEC 61683; IEC 60068; IEC 60529; IEC 62116; IEC 61727; EN 50549-1; AS 4777.2; VDE-AR-N-4105; VDE 0126-1-1; CEI-021; G 99; C10/11; NB/T 32004-2018; GB/T 19964-2012			



On-Grid İnverterler

Üç Faz: GT3-4K/5K/8K/10K/12K/15K/17K/20K/22K/25K D1

LIVOLTEK GT3-4/5/8/10/12/15/17/20/22/25K-D1 PV inverterler, üç fazlı şebeke bağlantısı olan konut veya ticari müşteriler için geliştirilmiştir. Shade Fix/Entegre gölgeleme yönetim sistemi ile eviricinin güneş panelleri hafif gölgeli olduğunda bile enerji üretimini en üst düzeye çıkarmasını sağlar. İnverterde veya elektrik kablolarında meydana gelebilecek ark arızalarının neden olduğu elektrik yangınlarını önlemek için isteğe bağlı bir AFCI modülü entegre edilebilir. 160V gibi düşük uyanma voltajı sayesinde uzun çalışma süresi ile büyük ticari ve endüstriyel enerji santralleri için yüksek verimli, ideal bir seçimdir.



Özellikler

- %150 DC/AC Oranı
- Harici LCD Ekran ile Erişim
- Şebekeye Satış Sınırlandırması (Opsiyonel)
- Mobile App: İzleme ve Optimizasyon
- AFCI-Ark Hatası Tespit Kiti (Opsiyonel)
- Tak-Çalıştır ile Kolay Kurulum
- Verimli Üretim için Artırılabilir %10 AC Çıkış Kapasitesi



%98.6 Verimlilik



Şebekeye Satış Oranını Belirleme



IP65 C5 Korozyon Önleyici



SPD II Koruması

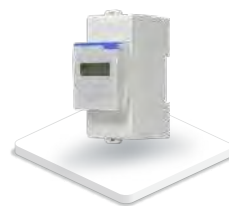
Uyumlu Ürünler



LCD Ekran



PSD200-FI Dongle



Enerji Metre



İzleme Sistemleri

Teknik Özellikler

Model	GT3-4KD1	GT3-5KD1	GT3-8KD1	GT3-10KD1	GT3-12KD1	GT3-15KD1	GT3-17KD1	GT3-20KD1	GT3-22KD1	GT3-25KD1
Giriş(PV)										
Maks. DC Giriş Gücü	6000Wp	7500Wp	12000Wp	15000Wp	18000Wp	22500Wp	25500Wp	30000Wp	33000Wp	37500Wp
Maks. DC Giriş Voltajı	1100V									
Minimum PV Giriş Voltajı	140V									
Başlatma DC Giriş Voltajı	160V									
Nominal DC Giriş Gerilimi	650V									
MPPT Çalışma Aralığı	140V-1000V									
Maks. DC Giriş Akımı	16A+16A				40A+20A		40A+40A			
Maks. Kısa Devre Akımı	21A+21A				52A+26A		52A+52A			
MPPT Sayısı	2				2		2			
MPP Başına Dize Sayısı	1/1				2/1		2/2			
Çıkış (AC)										
Nominal Çıkış Gücü	4000W	5000W	8000W	10000W	12000W	15000W	17000W	20000W	22000W	25000W
Maks. Görünür Çıkış Gücü	4400VA	5500VA	8800VA	11000VA	13200VA	16500VA	18700VA	22000VA	24200VA	27500VA
Nominal AC Şebeke Çıkış Akımı	5.8A	7.2A	11.5A	14.4A	17.3A	21.7A	24.5A	28.9A	31.8A	36.1A
Maks. AC Çıkış Akımı	6.4A	7.9A	12.7A	15.9A	19.1A	23.8A	27.0A	31.8A	34.9A	39.7A
AC Şebeke Gerilimi	3/N/PE, 220V/380V, 230V/400V									
AC Şebeke Voltaj Aralığı	270V-480V									
Nominal Şebeke Frekansı	50Hz/60Hz									
Şebeke Frekans Aralığı	45Hz-55Hz/55Hz-66Hz									
Güç Faktörü	> 0.99 Rated Power (Adjustable 0.8 Leading - 0.8Lagging)									
Çıkış THDi (@Nominal Çıkış)	<3%									
Verimlilik										
Maks. Verimlilik	98.50%	98.50%	98.60%	98.60%	98.60%	98.50%	98.50%	98.60%	98.60%	98.60%
AB Verimliliği	98.10%	98.10%	98.20%	98.20%	98.20%	98.10%	98.10%	98.20%	98.20%	98.20%
MPPT Verimliliği	>99%									
Koruma										
Dalgalanma Koruması	Type II									
PV Akım Tespiti	Evet									
Aşırı Akım Koruması	Evet									
AC Kısa Devre Koruması	Evet									
Aşırı Gerilim Koruması	Evet									
Anti Adalama Koruması	Evet									
Kaçak Akım İzleme Ünitesi	Evet									
Entegre AFCI (DC Ark Arızası Devre Koruması)	Opsiyonel									
Genel Veriler										
Boyutlar (W*H*D)	530*444*190mm									
Ağırlık	18.5kg				20.5kg		23.5kg	23.5kg	24.5kg	24.5kg
Koruma Derecesi	IP65				IP65					
Soğutma	Natural Cooling				Fan Cooling					
Çalışma Sıcaklığı Aralığı	-30℃~ 60℃ (Derating at 45℃)				-30℃~ 60℃ (Derating at 45℃)					
Tipik Gürültü Emisyonu	<30dB				<40dB					
Gece Öz Tüketimi	<1W									
Ekran	LED+APP/ LCD (Optional)									
İletişim	RS485(LCD/Meter), 4G/Wi-Fi+Bluetooth, DRM									
Sertifikalar ve Standartlar										
Şebeke Düzenlemesi	IEC61727, IEC62116, CQC ABNT NBR 16149, ABNT NBR 16150									
Güvenlik/EMC	IEC62109-1/2, EN61000-6-1/2/3/4									
Garanti	5 Yıl /10 Yıl (Opsiyonel)									

NEW FROM SOLAX

X3-MIC-G2



X3-MIC-G2

3.0kW/4.0kW/5.0kW/6.0kW
8.0kW/10.0kW/12.0kW/15.0kW

Features

High-efficiency

- Maximum efficiency is up to 98.3%
- Low startup voltage, ultrawide MPPT voltage range
- 200% oversizing, 110% overloading output (Except 15kW model)
- In-built global MPP scan for higher yield efficiency

Safe

- IP66 protection
- Integrated SPD protection on both AC&DC

Smart

- Built-in export power control
- Remote setting and upgrading
- 24h monitoring and maintenance (Optional)
- Intelligent load management - heat pump (Adapter Box required)
- Multiple monitoring methods supported, Optional: WiFi/LAN/4G

Economic

- Ultra-high power density
- Max. MPP current per string is 16A, support high power solar panels

DC INPUT

Max. PV array input power [Wp]	6000	8000	10000	12000	16000	20000	24000	30000
Max. PV input voltage [V]	1000	1000	1000	1000	1000	1000	1000	1000
Startup voltage [V]	150	150	150	150	150	150	150	150
Nominal input voltage [V]	640	640	640	640	640	640	640	640
MPP tracker voltage range [V]	120~980	120~980	120~980	120~980	120~980	120~980	120~980	120~980
No. of MPP trackers/Strings per MPP tracker	2(1/1)	2(1/1)	2(1/1)	2(1/1)	2(1/1)	2(1/1) ^①	2(2/1)	2(2/1)
Max. PV input current[A]	16/16	16/16	16/16	16/16	16/16	16/16 ^①	32/16	32/16
Isc PV Array Short Circuit current [A]	20/20	20/20	20/20	20/20	20/20	20/20 ^①	40/20	40/20

AC OUTPUT

Rated AC output power [W]	3000	4000	5000	6000	8000	10000	12000	15000
Rated AC output current [A]*	4.6/4.4	6.1/5.8	7.6/7.3	9.1/8.7	12.2/11.6	15.2/14.5	18.2/17.4	22.7/21.8
Max. AC output apparent power [VA]	3300	4400	5500	6600	8800	11000	13200	15000
Max. AC output current [A]	4.8	6.4	8.0	9.6	12.8	16.0	19.1	22.7
Nominal AC voltage/AC voltage range [V]**	220/380V, 230/400V, 3/(N)/PE; (95-285V)*							
Nominal AC frequency/AC frequency range [Hz]**	50/60; ±5							
Power Factor range	0.8 leading-0.8 lagging							
THDi (Rated power) [%]	<3							

SYSTEM DATA

Max. efficiency [%]	98.3							
Euro efficiency [%]	97.8							
Standby consumption (night) [W]	<3							
Ingress protection	IP66							
Operating ambient temperature range [°C]	-30~+60							
Max. operation altitude [m]	4000(Derating above 3000)							
Relative humidity [%]	0~100							
Typical noise emission [dB]	<30	<30	<30	<30	<45	<45	<50	<50
Storage temperature [°C]	-30~+60							
Dimensions (W×H×D) [mm]	342*434*144.5				342*434*156			
Weight [kg]	15.5	15.5	15.5	15.5	17	17	18	18
Cooling concept	Natural cooling				Smart fan cooling			
Communication interfaces	USB/RS485/DRM, Optional: Meter							
Optional monitoring dongle	Pocket WiFi / LAN / 4G							
Display	2 x LED + LCD(16 x 2) / APP							

PROTECTION

Over/under voltage protection	YES							
DC isolation protection	YES							
DC reverse protection	YES							
Grid monitoring	YES							
DC injection monitoring	YES							
Back feed current monitoring	YES							
Residual current detection	YES							
Anti-islanding protection	YES							
Over temperature protection	YES							
SPD (DC/AC)	Type II / Type II (Optional)							
Arc-fault circuit interrupter(AFCI)	Optional							
AC auxiliary power supply(APS)	Optional							

STANDARD

Safety	IEC/EN 62109-1; IEC/EN 62109-2; NB/T 32004							
EMC	IEC/EN 61000; NB/T 32004							
Certification	VDE4105, EN 50549, AS 4777.2, VDE4105, G98/G99, IEC 61727, IEC 62116, IEC 61683, IEC 60068, EN 50530, NB/T 32004							

① Input 1 is optional with two strings(Max. input current: 32A, Max. short circuit current: 40A)

*V2.7. Information may be subject to modify without notice. 650.00003.00

* The two data refer to different grid voltage 220V/230V

** The AC voltag and the frequency range may vary from different country codes

NEW FROM SOLAX

X3-PRO G2



X3-PRO G2

8kW/10kW/12kW/15kW
17kW/20kW/25kW/30kW

Features

High-efficiency

- Maximum efficiency is up to 98.5%
- Low startup voltage, ultrawide MPPT voltage range
- 150% DC oversizing, 110% AC overloading output
- In-built global MPP scan for higher yield efficiency

Safe

- SPD type II protection on both AC&DC
- ARC protection (Optional)
- IP66 protection

Smart

- Built-in export power control
- Intelligent load management - heat pump (Adapter Box required)
- 24h monitoring and maintenance (Optional)
- Multiple monitoring methods supported, Optional: WiFi/LAN/4G

Economic

- Ultra-high power density
- Maximum 32A DC input current per MPP tracker, support high power solar panels
- Up to 3 MPPTs, 2 strings per MPPT
- Support Master/Slave parallel function

DC INPUT								
Max. PV array input power [Wp]	12000	15000	18000	22500	25500	30000	37500	45000
Max. PV input voltage [V]	1100	1100	1100	1100	1100	1100	1100	1100
Start startup voltage [V]	200	200	200	200	200	200	200	200
Nominal input voltage [V]	650	650	650	650	650	650	650	650
MPP tracker voltage range [V]	160~980							
No. of MPP trackers	2	2	2	2	2	2	3	3
Strings per MPP tracker	2	2	2	2	2	2	2	2
Max. PV input current [A]	32/32	32/32	32/32	32/32	32/32	32/32	32/32/32	32/32/32
Isc PV Array Short Circuit current [A]	40/40	40/40	40/40	40/40	40/40	40/40	40/40/40	40/40/40
AC OUTPUT								
Rated AC output power [kW]	8000	10000 ^①	12000	15000	17000	20000	25000	30000 ^②
Rated AC output current [A]*	12.2/11.6	15.2/14.5	18.2/17.4	22.8/21.8	25.8/24.7	30.3/29	37.9/36.3	45.5/43.5
Max. AC output apparent power [VA]	8800	11000 ^③	13200	16500	18700	22000	27500	30000 ^④
Max. AC output current [A]	13.2	16	19.3	24.2	27.5	33.6	41.8	45.5
Nominal AC voltage/AC voltage range [V]**	220/380V, 230/400V, 3/N/PE, 3/PE; 95-285V							
Nominal AC frequency/AC frequency range [Hz]**	50/60; ±5							
Power Factor range	0.8 leading ~ 0.8 lagging							
THDi (Rated power) [%]	<3							
SYSTEM DATA								
Max. efficiency [%]	98.20	98.20	98.20	98.30	98.30	98.30	98.50	98.50
Euro efficiency [%]	97.70	97.70	97.70	97.80	97.80	97.80	98.00	98.00
Standby consumption (Night) [W]	<3							
Ingress protection	IP66							
Operating ambient temperature range [°C]	-30~+60							
Max. operation altitude [m]	4000							
Relative humidity [%]	0~100							
Typical noise emission [dB]	<35	<35	<35	<55	<55	<55	<55	<58
Storage temperature [°C]	-30~+60							
Dimensions (WxHxD) [mm]	482x417x186							
Weight [kg]	24.5			26			28	
Cooling concept	Natural cooling			Smart fan cooling				
Communication interfaces	USB / RS485 / DRM, Optional: Meter							
Optional monitoring dongle	Pocket WiFi/LAN/4G							
Display	2 x LED + LCD (16 x 2) / APP							
PROTECTION								
Over/under voltage protection	YES							
DC isolation protection	YES							
Grid monitoring	YES							
DC injection monitoring	YES							
Residual current detection	YES							
Anti-islanding protection	YES							
Over Temp protection	YES							
SPD (DC/AC)	Type II / Type II							
AC auxiliary power supply (APS)	Optional							
Arc-fault circuit interrupter (AFCI)	Optional							
STANDARD								
Safety	IEC/EN 62109-1; IEC/EN 62109-2; NB/T 32004							
EMC	IEC/EN 61000; NB/T 32004							
Certification	VDE4105; EN 50549; AS 4777.2; VDE4105; IEC 61727; IEC 62116; IEC 61683; IEC 60068; EN 50530; NB/T 32004							

* The two data refer to different grid voltage 220V/230V

** The AC voltage and the frequency range may vary from different country codes

①9999 for AS4777.2 ②29999 for AS4777.2

*V2.5. Information may be subject to modify without notice. 650.00004.00

PV DİZİ İNVERTÖR

hopeSun

8~33KTL



ÖZELLİKLER



Yüksek Verimlilik

- 2 MPPT ile %98,60 maksimum verimlilik
- 20A giriş akımı, 210mm panellerle uyumlu
- Yüksek hassasiyet ve akıllı dizi algılama



Kullanıcı Dostu

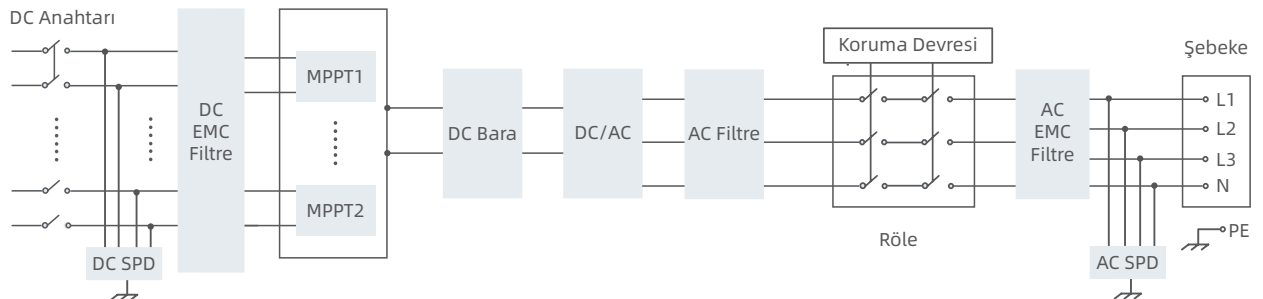
- Zero export arayüzü ile uyumlu
- Uygulama üzerinden devreye alma
- Uzaktan ürün yazılımı güncellemesi



Güvenilirlik

- Düşük/yüksek gerilim koruması
- Ada modunda çalışmaya karşı koruma
- Dahili Tip II DC&AC SPD

TOPOLOJİK GRAFİK



PARAMETRELER

Model	hopeSun 8KTL	hopeSun 10KTL	hopeSun 12KTL	hopeSun 15KTL	hopeSun 17KTL	hopeSun 20KTL	hopeSun 22KTL	hopeSun 25KTL	hopeSun 30KTL	hopeSun 33KTL	
DC Giriş											
Maks.FV Giriş Gücü	12kW	15kW	18kW	22.5kW	25.5kW	30kW	33kW	37.5kW	45kW	49.5kW	
Maks.Giriş Gerilimi	1100V										
Başlangıç Gerilimi	180V										
MPPT Gerilim Aralığı	200 ~ 1000V										
MPPT Aralığı Tam Yük	370 ~ 850V			450 ~ 850V			425 ~ 850V				
Maks.MPPT Başına Giriş Akımı	20A / 20A			26A / 20A			30A / 30A		40A / 40A		
Maks.Kısa Devre Akımı	30A / 30A			39A / 30A			45A / 45A		60A / 60A		
DC Giriş Sayısı	1 / 1			2 / 1			2 / 2			3 / 3	
MPPT Sayısı	2										
AC Giriş											
Nominal Çıkış Gücü	8kW	10kW	12kW	15kW	17kW	20kW	22kW	25kW	30kW	33kW	
Maks.Çıkış Gücü	8.8kW	11kW	13.2kW	16.5kW	18.7kW	22kW	24.2kW	27.5kW	33kW	36.3kW	
Nominal Çıkış Gerilimi	230V / 400V (3P + N + PE)										
Çalışma Gerilim Aralığı	300 ~ 520V										
Nominal Çıkış Akımı	11.6A	14.5A	17.4A	21.7A	24.6A	28.9A	31.8A	36.1A	43.5A	47.6A	
Maks.Çıkış Akımı	12.7A	16.0A	19.1A	23.9A	27.0A	31.8A	35.0A	39.7A	47.8A	52.4A	
Nominal Şebeke Frekansı	50Hz / 60Hz										
Güç Faktörü	>0,99 (0,8 öncülük eden ~ 0,8 geri kalan)										
Harmonik (THD)	<3% (nominal güçte)										
Verimlilik											
Maks.Verimlilik	98.60%										
Avrupa Verimliliği	98.10%							98.30%			
Koruma											
Aşırı Gerilim Koruması	DC tip II / AC tip II										
İzolasyon Empedans Tespiti	Evet										
Artık Kaçak Akım Tespiti	Evet										
FV Dizi Arıza Tespiti	Evet										
FV Ters Polarite Koruması	Evet										
Adalama-Önleme (Anti-Islanding) Koruması	Evet										
Çıkış Aşırı Akım Koruması	Evet										
DC Anahtarı	Evet										
Zero Export Fonksiyonu	Evet										
Genel Parametreler											
Boyutlar (G*Y*D)	380*400*247mm					380*450*247mm					
Ağırlık	≤22kg					≤25kg		≤30kg	≤35kg		
Giriş Koruması	IP65										
Çalışma Sıcaklık Aralığı	-40 ~ +60°C										
Soğutma Sistemi	Doğal soğutma			Akıllı hava soğutma							
Topoloji	Transformatörsüz										
Çalışma Yüksekliği	4000m (>3000m azalma oranı)										
Ekran	LED, WLAN + APP										
İletişim	Wi-Fi										
DC Bağlantı Tipi	MC4										
AC Bağlantı Tipi	SC terminali					Tüp tipi terminal			OT/ DT terminali		

SUNNY TRIPOWER 5.0 / 6.0 / 8.0 / 10.0 SMART ENERGY



STP5.0-3SE-40 / STP6.0-3SE-40 / STP8.0-3SE-40 / STP10.0-3SE-40



SMA ShadeFix
STRING LEVEL OPTIMIZATION

Premium monitoring service
SMA SMART CONNECTED



Store energy

- Three-phase / DC-coupled
- Integrated battery-backup function
- Fast charging
- Compatible with high-voltage batteries from leading manufacturers

Smart and effective

- Smart energy management with the Sunny Home Manager
- Maximum energy yield thanks to SMA ShadeFix

Connect to the grid easily

- Intuitive commissioning via app
- Quick and easy to install thanks to external terminals
- Compact design means minimum space requirements

Convenient all round

- Full-scale professional support for solar power professionals
- Automated service thanks to SMA Smart Connected
- Warranty extension from 5 to 10 years – free of charge

SUNNY TRIPOWER 5.0 / 6.0 / 8.0 / 10.0 SMART ENERGY

The beating heart of any home

The Sunny Tripower Smart Energy hybrid inverter is the two-in-one system for supplying solar power at home. With this, SMA has combined smart technology and integrated services to create a space-saving compact system, drawing on more than 30 years of experience in storage. With Sunny Tripower Smart Energy, users can easily and conveniently generate, use and store solar power. It is possible to make additions to the system at any time, incorporating e-mobility or heat pumps. The integrated battery-backup function safeguards the household electricity supply even in the event of a grid failure. That makes domestic PV systems comprehensive, smart energy systems with solar energy self-sufficiency of up to 100 percent.

Technical data	Sunny Tripower 5.0 Smart Energy	Sunny Tripower 6.0 Smart Energy	Sunny Tripower 8.0 Smart Energy	Sunny Tripower 10.0 Smart Energy
Input (PV DC)				
Max. PV array power	7500 Wp	9000 Wp	12000 Wp	15000 Wp
Max. input voltage	1000 V	1000 V	1000 V	1000 V
MPP voltage range	210 V to 800 V	250 V to 800 V	330 V to 800 V	280 V to 800 V
Rated input voltage	600 V			
Min. input voltage / initial input voltage	150 V / 180 V			
Max. input current input A / input B	12.5 A / 12.5 A			12.5 A / 25 A
Max. DC short-circuit current input A / input B	20 A / 20 A			20 A / 40 A
Number of independent MPP inputs / strings per MPP input	2/A: 1; B: 1			2/A: 1; B: 2
Battery connection				
Battery type	Lithium-ion ¹⁾			
Voltage range	150 V to 600 V			
Max. charging current / max. discharging current	30 A ²⁾ / 30 A ²⁾			
Number of connectable batteries	1			
Max. charging power / max. discharging power ³⁾	7500 W / 6000 W	9000 W / 7200 W	10600 W / 10600 W	
AC connection				
Rated power (at 230 V, 50 Hz)	5000 W	6000 W	8000 W	10000 W
Max. apparent AC power	5000 VA	6000 VA	8000 VA	10000 VA
Nominal AC voltage	3 / N / PE; 220 V / 380 V 3 / N / PE; 230 V / 400 V 3 / N / PE; 240 V / 415 V			
AC voltage range	156 V to 277 V			
AC power frequency/range	50 Hz / 45 Hz to 55 Hz			
Rated grid frequency / rated grid voltage	50 Hz/230 V			
Rated output current	3 x 7.3 A	3 x 8.7 A	3 x 11.6 A	3 x 14.5 A
Max. output current	3 x 7.6 A	3 x 9.1 A	3 x 12.1 A	3 x 15.2 A
Power factor at rated power / adjustable displacement power factor	1 / 0.8 overexcited to 0.8 underexcited			
Feed-in phases/connection phases	3/3			
Efficiency				
Max. efficiency / European Efficiency	98.2% / 97.3%	98.2% / 97.5%	98.2% / 97.8%	98.1% / 97.5%
Output (AC backup) during on-grid mode				
Max. connectable power for backup load	13800 W			
Max. output current for backup load	3 x 20 A			
Output (AC backup) during off-grid mode				
Rated power 1~/3~ (at 230 V, 50 Hz)	1660 W / 5000 W	2000 W / 6000 W	2660 W / 8000 W	3330 W / 10000 W
Max. apparent AC power	5000 VA	6000 VA	8000 VA	10000 VA
Output power / output apparent power < 5 min	6000 W / 6000 VA	7200 W / 7200 VA	12000 W / 12000 VA	
Output power / output apparent power < 10 s	10000 W / 10000 VA		12000 W / 12000 VA	
Nominal AC voltage	3 / N / PE; 230 V / 400 V			
AC grid frequency	50 Hz			
Tariff switching to backup mode	30 ms to 10 s (adjustable)			
Protective devices				
Input-side disconnection point (PV DC)	●			
Ground fault monitoring / grid monitoring	● / ●			
DC reverse polarity protection / AC short circuit current capability / galvanically isolated	● / ● / –			
All-pole-sensitive residual-current monitoring unit	●			
Protection class (according to IEC 61140)	I			
Overvoltage category (according to IEC 60664-1) grid/battery/PV	III / II / II			
SPD	DC type II / AC type II			
General data				
Dimensions (W/H/D)	500 mm / 598 mm / 173 mm (19.7 inch / 23.5 inch / 6.8 inch)			
Weight	30 kg (66 lbs)			
Operating temperature range	-25°C to +60°C (-13°F to +140°F)			
Noise emission, typical	30 dB(A)			
Self-consumption (at night)	44 W			
Topology / cooling method	Transformerless/convection			
Degree of protection (according to IEC 60529) / climate category (according to IEC 60721-3-4)	IP65/4K26			
Max. permissible value for relative humidity (non-condensing)	100%			
Equipment				
PV connection / BAT connection	SUNCLIX / MC4, incl. MC4 battery cable, 3 m			
AC terminals	AC CONNECTOR (5 x 1.5 to 10 mm²)			
Display via smartphone, tablet, laptop	●			
Number of interfaces: Wi-Fi/Ethernet/BAT-CAN	1/2/1			
Number of digital inputs / outputs	5/1			
Communication protocols	Modbus (SMA, Sunspec), Speedwire/Webconnect			
Shade management: SMA ShadeFix (integrated)	●			
Warranty: 5/10 years	● / ● ⁴⁾			
Certificates and permits (more available upon request)	CE, IEC 62109-1/-2, TOR Generator type A, VDE0126-1-1, VDE AR-E-2510-2, C10/11, VDE-AR-N4105			
Country availability of SMA Smart Connected	AT, BE, CH, DE, NL			
Model type number	STP5.0-3SE-40	STP6.0-3SE-40	STP8.0-3SE-40	STP10.0-3SE-40

● Standard features ○ Optional features – Not available Information refers to nominal conditions Provisional data as of Dec. 2022/1 1) BYD Premium HVS 5.1-12.8, BYD Premium HVM 11.0-22.1; others being planned 2) $U_{PV} < 700\text{ V}$ and $U_{BAT} > 220\text{ V}$ 3) Depending on battery connected 4) When device is registered via the SMA product registration page (sma-service.com). The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-Solar.com



Sunny Tripower X powered by ennexOS

12 / 15 / 20 / 25

Geleceğe yönelik sistem tasarımı
için entegre



Entegre sistem yöneticisi

- 5 invertere (135 kVA) kadar izleme ve kontrol dahill
- Sunny Portal powered by ennexOS için doğrudan erişim
- SMA Dynamic Power Control

Güvenlik dahil

- Ark koruma fonksiyonu SMA ArcFix
- DC aşırı gerilim koruması
- Basitleştirilmiş şebeke ve FV sistem koruması

Maksimum verim

- Entegre SMA ShadeFix ile verim artışı
- I-V Curve ile arıza tespiti¹⁾
- SMA Smart Connected

Daha fazla esneklik

- 3 MPP izleme
- Güçlü FV modülleri için yüksek giriş akımı
- Gelecekteki enerji yönetimi fonksiyonları için modüler genişletilebilirlik

Yeni Sunny Tripower X, ticari ve konut tipi FV sistemleri için yenilikçi sistem çözümüdür.

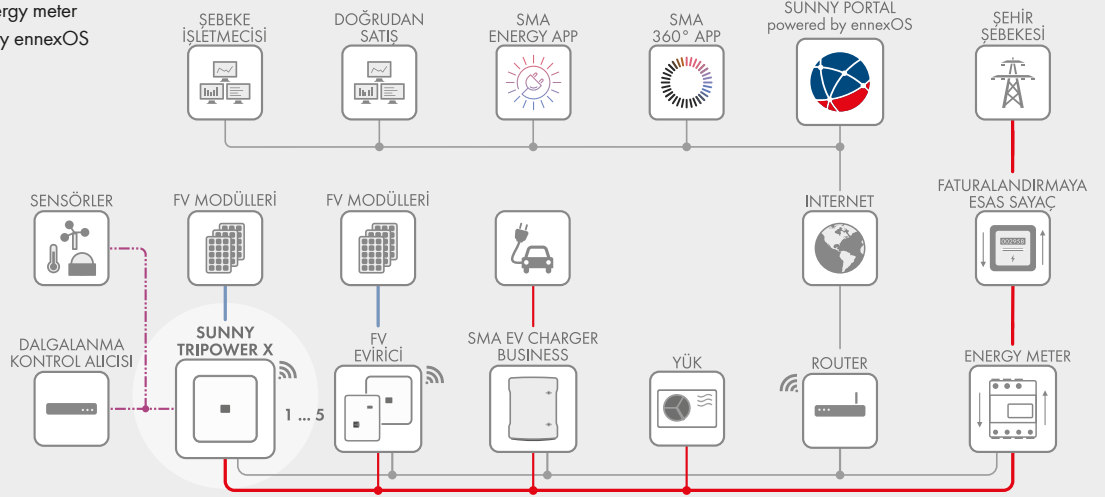
Entegre System Manager fonksiyonu ile, ennexOS tarafından desteklenen Sunny Portal'a direkt erişim ve 5 invertere kadar izleme ve mümkündür, ayrıca energy meter da bağlanabilir. Bu da, SMA Dynamic Power Control aracılığıyla aktif ve reaktif gücün dinamik kontrolünü sağlar. Geniş giriş gerilimi aralığı ve yüksek giriş akımı kapasitesi sayesinde, en yeni nesil güçlü FV modülleri ile uyumludur. Yenilikçi gövde tasarımı, elektronik bileşenlerin verimli bir şekilde soğutulmasını ve böylece Sunny Tripower X'in maksimum çalışma ömrünü garanti eder.

Devreye alma, sistemdeki tüm cihazlar için merkezi olarak kolay ve hızlı bir şekilde yapılabilmektedir. İşletim sırasında kullanıcılar, entegre yazılım çözümlerinden yarar sağlayabilirler: SMA ArcFix, ark tespitini sağlayarak güvenlik seviyesini artırır.

1) yakında

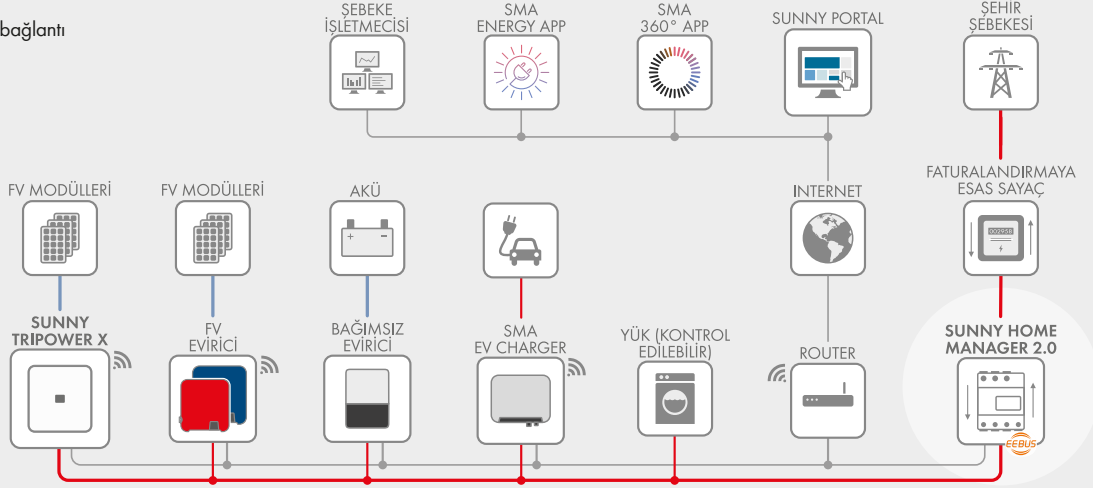
SUNNY TRIPOWER X, sistem yöneticisi olarak

- Azami 5 evirici ve 1 energy meter
- Sunny Portal powered by ennexOS ile doğrudan bağlantı



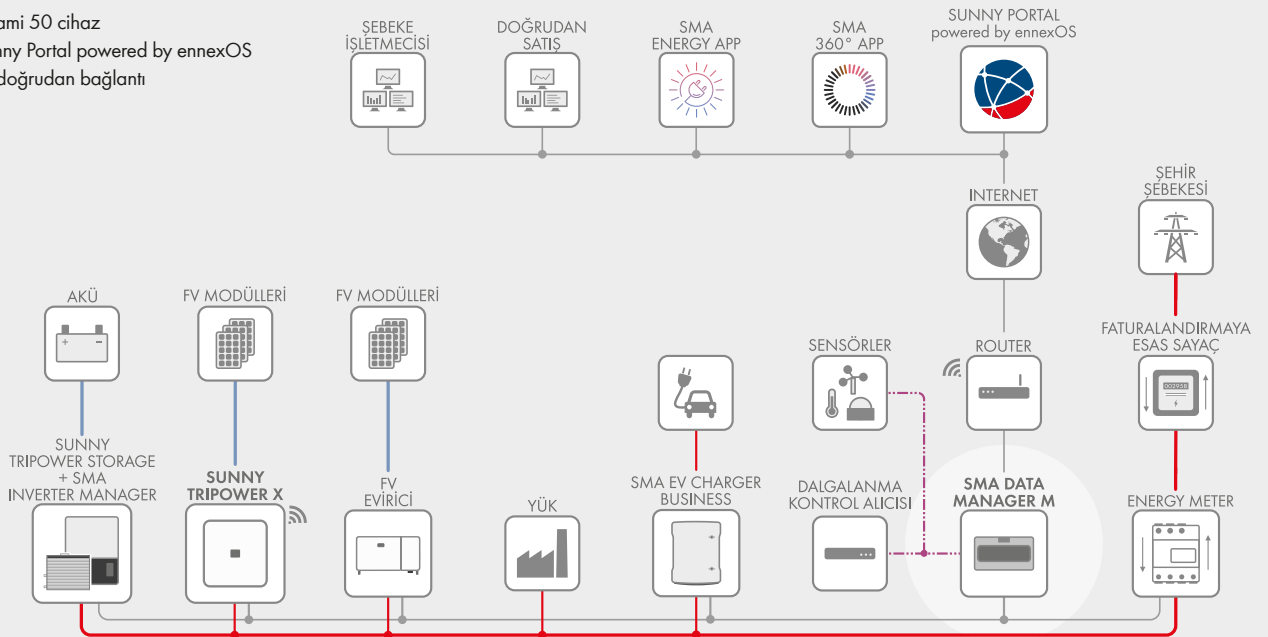
SUNNY TRIPOWER X, sistem yöneticisi olarak Sunny Home Manager 2.0 ile

- Azami 24 cihaz
- Sunny Portal'a doğrudan bağlantı



SUNNY TRIPOWER X, sistem yöneticisi olarak SMA DATA MANAGER M ile

- Azami 50 cihaz
- Sunny Portal powered by ennexOS ile doğrudan bağlantı



Teknik veriler	Sunny Tripower X 12	Sunny Tripower X 15	Sunny Tripower X 20	Sunny Tripower X 25
Giriş (DC)				
Maks. FV dizi gücü	18000 Wp STC	22500 Wp STC	30000 Wp STC	37500 Wp STC
Maks. giriş gerilimi	1000 V			
MPP gerilim aralığı	210 V ile 800 V arası	260 V ile 800 V arası	345 V ile 800 V arası	430 V ile 800 V arası
Anma giriş gerilimi	580 V			
Min. giriş gerilimi / Başlatma giriş gerilimi	150 V / 188 V			
MPP-Tracker başına maks. kullanılabilir giriş akımı	24 A			
MPP-Tracker başına maks. kısa devre akımı	37,5 A			
Bağımsız MPP-tracker sayısı / MPP-tracker başına dizi sayısı	3 / 2			
Çıkış (AC)				
Anma gücü (230 V, 50 Hz için)	12000 W	15000 W	20000 W	25000 W
Anma görünür gücü / Maks. görünür güç	12000 VA/12000 VA	15000 VA/15000 VA	20000 VA/20000 VA	25000 VA/25000 VA
Nominal AC gerilimi	220 V / 380 V; 230 V / 400 V; 240 V / 415 V			
Gerilim aralığı	176 V ile 275 V / 304 V ile 477 V arası			
Şebeke frekansı / Aralık	50 Hz / 44 Hz ile 56 Hz arası 60 Hz / 54 Hz ile 66 Hz arası			
Anma şebeke frekansı / Anma şebeke gerilimi	50 Hz / 230 V			
Anma çıkış akımı / Maks. çıkış akımı	17,4 A / 36,6 A	21,7 A / 36,6 A	29 A / 36,6 A	36,2 A / 36,6 A
Besleme fazları / AC bağlantısı	3 / 3-(N)-PE			
Anma gücündeki güç katsayısı / Faz farkı faktörü, ayarlanabilir	1 / 0,0 yüksek ikazlı ile 0,0 düşük ikazlı arası			
Harmonik (THD)	< % 3			
Verim				
Maks. verim / Avr. Verim	% 98,2 / % 97,6	% 98,2 / % 97,8	% 98,2 / % 97,9	% 98,2 / % 98,0
Koruyucu düzenekler				
Giriş tarafı bağlantı kesme cihazı	●			
Topraklama hatası denetimi / Şebeke izleme	● / ●			
DC ters kutup koruması / AC kısa devre koruması	● / ●			
Tüm akımlara hassas kaçak akım izleme düzeneği	●			
Koruma sınıfı (IEC 62109-1'e göre) / Yüksek gerilim kategorisi (IEC 62109-1'e göre)	I / AC: III; DC: II			
Ark koruma fonksiyonu (AFCI) / I-V jeneratör arıza teşhisi	● / ● ¹⁾			
DC yüksek gerilim parafuduru (Tip 2, Tip 1/2)	○			
Genel veriler				
Ebatlar (G / Y / D)	728 mm / 762 mm / 266 mm (28,7 inç / 30,0 inç / 10,5 inç)			
Ağırlık	35 kg (77 lb)			
Çalışma sıcaklığı aralığı	-25 °C ile +60 °C (-13 °F ile +140 °F) arası			
Ses emisyonu, maksimum (1 m)	59 dB(A)			
Öz tüketim (gece)	< 5 W			
Topoloji / Soğutma prensibi	galvanik yalıtım yok / OptiCool			
Koruma türü (IEC 60529'a göre) / İklim kategorisi (IEC 60721-3-4'e göre)	IP65 / 4K26			
İzin verilen maksimum bağıl nem değeri (yoğuşma olmadan)	% 100			
Donatım / Fonksiyon / Aksesuar				
DC bağlantısı / AC bağlantısı	SUNCLIX / Yay baskılı terminal			
LED gösterge (Durum / Hata / İletişim)	●			
Araçbirim: Ethernet / WLAN / RS485 (istemci)	● (2 Ports) / ● / ○ ¹⁾			
Veri protokolleri: SMA Modbus / SunSpec Modbus / Speedwire	● / ● ¹⁾ / ●			
Çok fonksiyonlu röle / Genişletme modülü için takma yeri	● / ● (1 Port)			
Dijital girişlerin sayısı	6			
Montaj şekli	Duvara montaj			
SMA ShadeFix / Integrated Plant Control / Q on Demand 24/7	● / ● / ●			
Off-Grid yetenekli	●			
Garanti: 5 / 10 / 15 / 20 yıl	● / ○ / ○ / ○			
Sertifikalar ve onaylar (diğerleri istek üzerine)	CE, UKCA; EN 50549-1/-2:2018; VDE-AR-N 4105:2018 incl. PAV-E; VDE-AR-N 4110:2018; TOR Erzeuger Typ A:2019-12; C10/C11:2019 & V1:2020 LV&MV; VDE 0126-1-1:2013/ A1:2012; VFR 2019; CEI 0-16/0-21:2019 & V1:2020; UNE 217002:2020; TED/749/2020 incl. NTS2.1; EREC G99/1-8:2021 Type A; EIFS 2018-2; PSE 2018; NRS 097-2-1:2017; NBR 16149:2013; IEC62109-1/-2; AS4777.2:2020 ¹⁾ ; IEC 61727 ¹⁾ ; IEC62116 ¹⁾			
Sistem yöneticisi fonksiyonu				
Toplam desteklenen cihaz sayısı - bunlardan:	6			
Desteklenen maksimum SMA evirici sayısı	5			
Desteklenen maksimum enerji sayacı sayısı	1			
FV evirici maksimum sistem gücü (AC anma gücü)	135 kVA			
Sistemdeki tüm cihazlarda merkezi devreye alma	●			
SMA cihazlarının Sunny Portal powered by ennexOS ile uzaktan parametrelendi	●			
SMA SPOT (Almanya) üzerinden doğrudan satış	●			
SMA Dynamic Power Control (örn. Zero Feed in/Q(U))	○ ²⁾			
Model tanımı	STP 12-50	STP 15-50	STP 20-50	STP 25-50

● Seri donanım ○ Opsiyonel – Kullanıma hazır değil “STC”- Standart deney şartları Nominal koşullar altında özellikler Sürüm: 02/2023 1) yakında 2) şu anda ücretsiz lisans

Aksesuarlar



SMA Sensor Module
MD.SEN-40¹⁾



SMA RS485 Module
MD.485-40¹⁾



DC yüksek gerilim parafuduru
(Tip I+II): DC_SPD_KIT7_T1T2
(Tip II): DC_SPD_KIT6-10

Designed to transform.



Fronius Verto

Ürünün güçlü yönleri

- 01 Tam esneklik
- 02 Yüksek güvenlik
- 03 Optimum kullanım

Ürünün güçlü yönleri

01 Tam esneklik

Fronius Verto, dört yüksek performanslı MPP izleyici ve geniş bir gerilim aralığı ile maksimum esneklik sunmaktadır. Bu sayede inverter karmaşık sistem tasarımları ve özel gereksinimleriniz için de en uygun seçimdir. Fronius Verto, gölgelenme durumunda bile entegre algoritması Dynamic Peak Manager özelliği ile optimum verim sağlamaktadır.

02 Yüksek güvenlik

Entegre yüksek gerilim koruması ve ark algılaması (Arc Guard Technology) sayesinde Fronius Verto, ilave bileşenler için masraf gerektirmeyen temel donanımıyla bile en üst seviyede güvenlik standartlarına uygundur. Verileriniz de Fronius'ta sağlam ellerde: Sertifikalı bilgi güvenliği sistemimize ek olarak Avrupa'daki sunucularımız ve bulut depolama sistemimiz bunu sağlamaktadır.

03 Optimum kullanım

Fazla güneş enerjisini e-mobilite veya ısıtma gibi diğer PV uygulamaları için kullanarak maliyetlerden tasarruf edin ve sisteminizin daha hızlı amorti edilmesini sağlayın. Fronius Verto, sunduğu arayüzler sayesinde Fronius Wattpilot ve Fronius Ohmpilot gibi tüketim sayaçlarının kolayca entegrasyonunu mümkün kılar. Yazılım çözümümüz Fronius EMIL, fotovoltaik sisteminizin mükemmel bir tamamlayıcısı olarak şirketinizin elektrikli filolarına komple otomatik ve tüm lokasyonları kapsayacak şekilde elektrik sağlar. Isı pompaları veya akıllı ev sistemlerinin bağlanması da Fronius Verto ile oldukça kolay.



Teknik özellikler

Verto 25.0 - 33.3

			Fronius Verto															
			Verto 25.0				Verto 27.0				Verto 30.0				Verto 33.3			
Giriş verileri	Maksimum Güç Noktası izleyici adeti		4				4				4				4			
	MPPT başına DC bağlantı soketi sayısı		2				2				2				2			
	MPPT başına kullanılabilir maks. giriş akımı ($I_{dc\ maks, MPPT}$)	A	28				28				28				28			
	Demet başına kullanılabilir maks. giriş akımı ($I_{dc\ maks, demet}$) ¹	A	28				28				28				28			
	MPPT başına modül alanı maks. kısa devre akımı ($I_{sc\ pv, MPPT}$) ²	A	50				50				50				50			
	Demet başına modül alanı maks. kısa devre akımı ($I_{sc\ pv, demet}$) ²	A	50				50				50				50			
	Modül alanı maks. kısa devre akımı - İnverter ($I_{sc\ pv, inverter}$) ²	A	150				150				150				150			
	Nominal giriş gerilimi ($U_{dc,r}$)	V	600				600				600				600			
	DC giriş akım alanı ($U_{dc\ min} - U_{dc\ max}$)	V	150 - 1000				150 - 1000				150 - 1000				150 - 1000			
	Besleme başlangıç giriş gerilimi ($U_{dc\ start}$)	V	150				150				150				150			
	Kullanılabilir MPP gerilim alanı ($U_{mpp\ min} - U_{mpp\ max}$) ¹	V	150 - 870				150 - 870				150 - 870				150 - 870			
	Maksimum Güç Noktası gerilim aralığı (nominal güçte) ($U_{mpp\ min} - U_{mpp\ max}$)	V	300 - 870				330 - 870				360 - 870				400 - 870			
	Kullanılabilir maks. DC gücü - MPPT ($P_{dc\ maks, PV}$)	Wpeak	13.000				13.000				13.000				13.000			
	Maks. FV jeneratör gücü - MPPT ($P_{PV\ max}$)	Wpeak	20.000				20.000				20.000				20.000			
	Maks. FV jeneratör gücü - İnverter ($P_{PV\ max}$)	Wpeak	37.500				40.500				45.000				50.000			

Çıkış verileri	AC nominal güç ($P_{ac,r}$)	W	25.000				27.000				29.990				33.300			
	Maks. çıkış gücü	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 çıkış akımı ($I_{ac,r}$)	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
	Ağ bağlantısı ($U_{ac,r}$)	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			
	Frekans (Frekans aralığı $f_{min} - f_{max}$)	Hz	50/60 (45 - 65)				50/60 (45 - 65)				50/60 (45 - 65)				50/60 (45 - 65)			
	Distorsiyon katsayısı	%	< 3				< 3				< 1				< 1			
	Güç faktörü ($\cos \varphi_{ac,r}$)		0-1 end./kap.				0-1 end./kap.				0-1 end./kap.				0-1 end./kap.			

¹ Tekli bir demet, komple / kullanılabilir durumda olan MPPT akımını teknik olarak işleyebilecek durumdadır. MPPT başına maks. akım 28A ile sınırlandırılmıştır.
² $I_{sc\ pv} = I_{sc\ max} \geq I_{sc\ (STC)} \times 1,25$ ör. şunlar uyarınca: IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

Teknik özellikler

Verto 25.0 - 33.3

			Fronius Verto			
			Verto 25.0	Verto 27.0	Verto 30.0	Verto 33.3
Genel veriler	Ebatlar (Yükseklik x Genişlik x Derinlik)	mm	865 x 574 x 279			
	Ağırlık (inverter)	kg	41,75			
	Koruma sınıfı		IP 66			
	Koruma sınıfı		1			
	Aşırı gerilim kategorisi (DC / AC)		2/3			
	Gece tüketimi	W	< 16			
	Soğutma		Aktif hava soğutması			
	Montaj		İç ve dış montaj			
	Çevre sıcaklığı-alanı	°C	-40 ile +60 arasında			
	İzin verilen nem oranı	%	0 - 100			
	Ses emisyonu	dB (A)	< 54,6			
	Deniz seviyesi üzerinde maks. yükseklik	m	3 000/4 000 (sınırsız/sınırlı voltaj aralığı)			
	Sertifikalar ve normlara uygunluk		IEC62109-1/-2; VDE-AR-N 4105:2018; R25; UNE 217002:2020; IEC 62116; EN 50549-1/-2; AS/NZS 4777.2:2020+A1; IEC 63027:2023; CEI 0-21; CEI 0-16			

Bağlantı teknolojisi	AC	Kablo kesiti	mm ²	4 - 35
		İletken materyal		Al ve Cu
		Kablo vidası		AC: M32 (Ø12-24,5 mm) Opsiyon 1 için hazırlanmış: M50 kablo vidası (Ø10-35 mm) opsiyon 2: 1,5" Conduit bağlantısı PE & Veri iletişimi: 2 x M32 (3xØ4,9-5,5 mm + 3xØ6,7-8,5mm)
	DC	Bağlantı soketleri		DC direkt bağlantısı Stäubli Multi Contact MC4
		İletken materyal		Al ve Cu

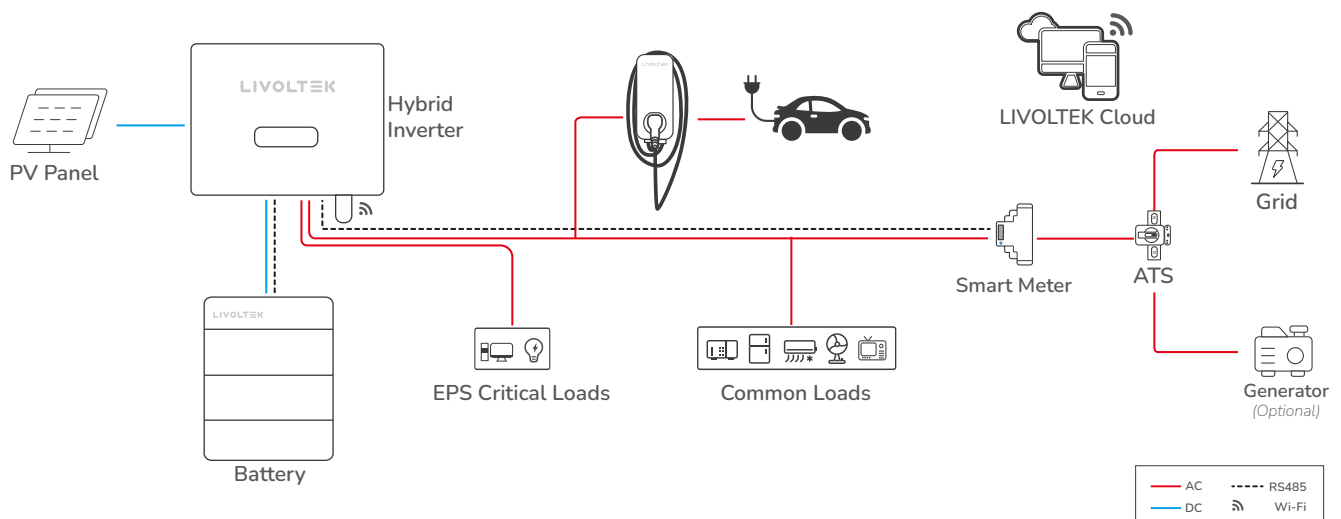
Verim	Maks. verim	%	97,47	98,03	98,02	97,98
	Avr. verimi (ηEU)	%	97,36	97,79	97,80	97,76
	Maksimum Güç Noktası uyum verimi	%	> 99,9			

Koruma düzenekleri	Doğru akım güç yalıtım ölçümü		Entegre edilmiş
	Doğru akım güç kesici		Entegre edilmiş
	Hatalı akım denetleme birimi		Entegre edilmiş
	Ark algılama - Arc Guard		Entegre edilmiş
	Ters kutuplama koruması		Entegre edilmiş
	DC/AC yüksek gerilim koruması		Tip 1+2 veya tip 2

Arabirimler	WLAN		Fronius Solar.web, Modbus TCP, JSON, 802.11b/g
	Ethernet LAN RJ45		10/100 Mbit; max. 100 m Fronius Solar.web, Modbus TCP, JSON
	Wired Shutdown (WSD)		Entegre edilmiş
	2 x RS485		Modbus RTU SunSpec (üçüncü sunucu) / Fronius Smart Meter
	6 dijital giriş 6 dijital giriş/çıkış		Dalgalanma kontrol alıcısı bağlantısı, enerji yönetimi, yüklenme yönetimi
	Data kaydedicisi ve Web sunucusu		Entegre edilmiş



Residential 3-phase Hybrid PV ESS



ESS

Necessary Products

Hybrid Inverter



HP3-5K/6K/8K/10K/12K/
15K/20K/25K/30K

Battery



BHF-S10~30 G1/G2^[1]

Battery



BHF-G15~60

Wi-Fi Dongle



PSD300

Smart Meter



LHE34C/LHE34D

[1]: BHF-S10~30-G1 is equipped with the old version BMS, BHF-S10~30-G2 is equipped with the new version BMS(supports paralleling function)

HYBRID INVERTER

THREE PHASE:

HP3-5K/6K/8K/10K/12K D2, HP3-15K/20K/25K/30K T2

HP3-5K/6K/8K/10K/12K/15K L2

HP3-15K/20K/25K/30K/36K M2

As the core of the energy storage solution, LIVOLTEK three phase hybrid inverter offers flexible and social-able solutions for both residential and commercial applications. With the ability of scalable battery storage, the high-voltage inverter facilitate powerful energy backup and also present high self-consumption with optimized built-in EMS to reduce energy cost.

High Performance

- 200% DC input oversizing
- 200% overload for backup loads
- Seamless switch for backup mode

Flexible Application

- Supports parallel function
- 100% unbalanced output
- Compatible with generator

Smart Management

- Peak shaving mode
- Support half-wave loads
- Remote control and upgrade

Safe and Reliable

- AC & DC SPD type II
- AFCI function optional
- Touch-free, one-click communication



INVERTER

INVERTER

INVERTER



Hybrid Inverter

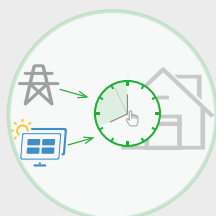
Three Phase: HP3-5K/6K/8K/10K/12K/15K/17K/20K /25K/30K D1

As the core of the energy storage solution, LIVOLTEK three phase hybrid inverter offers flexible and scalable solutions for both residential and commercial applications. With the ability of scalable battery storage, the high-voltage inverter facilitate powerful energy backup and also present high self-consumption with optimised built-in EMS to reduce energy cost. Furthermore, thanks to the multiple communication option in the inverter, external loads such as heat pumps can also be flexibly activated to optimize energy consumption.



Features

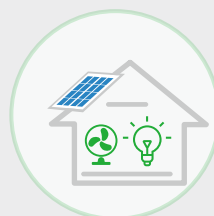
- 150% PV oversize
- 100% Unbalanced output
- Max. 20A DC input current per string
- Free online monitoring and maintenance
- Multi working modes for optimal performance
- UPS level switching time for critical loads



Flexible Setting
for Charge



Voltage Range
150V-800V



Support
Unbalanced Load



Export Limitation

Compatible Products



High Voltage Lithium Battery



Wi-Fi Dongle



Smart Meter



Monitoring System

Specifications

Model	HP3-5KD1	HP3-6KD1	HP3-8KD1	HP3-10KD1	HP3-12KD1	HP3-15KD1	HP3-17KD1	HP3-20KD1	HP3-25KD1	HP3-30KD1
PV Input										
Max. PV Input Power	7500Wp	9000Wp	12000Wp	15000Wp	18000Wp	22500Wp	25500Wp	30000Wp	37500Wp	45000Wp
Max. PV Input Voltage	1000V									
Nominal Input Voltage	600V									
MPPT Voltage Range	150 V ~ 850 V									
No. of MPPTs/Strings per MPPT	2/(1+1)	2/(1+1)	2/(1+1)	2/(1+1)	2/(1+1)	2/(1+2)	2/(2+2)	2/(2+2)	2/(2+2)	2/(2+2)
Max. PV Current	20/20A	20/20A	20/20A	20/20A	20/20A	20/32A	32/32A	32/32A	40/40A	40/40A
Max. Short Circuit Current	30/30A	30/30A	30/30A	30/30A	30/30A	30/48A	48/48A	48/48A	60/60A	60/60A
AC Output @ Grid										
Nominal AC Output Power	5000W	6000W	8000W	10000W	12000W	15000W	17000W	20000W	25000W	30000W
Max. AC Input Power	7500W	9000W	12000W	15000W	18000W	22500W	25500W	30000W	37500W	45000W
Nominal AC Voltage	3W+N+PE, 230/400V									
AC Frequency	50 Hz / 60 Hz									
Max. Output Current	8.5A	10.5A	13.5A	17.0A	21.5A	27.0A	30.0A	32.0A	40.0A	48.0A
THDi, Rated Power[%]	<3%									
Power Factor	~1 (Adjustable from 0.8 Leading to 0.8 Lagging)									
EPS Output @ Off Grid										
Nominal EPS Power	5000W	6000W	8000W	10000W	12000W	15000W	17000W	20000W	25000W	30000W
EPS Peak Power	1.1 × Pnom, 60sec									
Nominal Output Voltage	3W+N+PE, 230/400V									
Nominal Frequency	50 Hz / 60 Hz									
Nominal Output Current	7.3A	8.7A	11.6A	14.5A	17.4A	21.8A	24.8A	29.0A	36.3A	43.5A
THDv, Rated Power[%]	<3%									
Battery Input										
Battery Type	Lithium									
Battery Voltage Range	150V ~ 800 V									
Max. Charge/Discharge Current	30A/30A					50A/50A			60A / 60A	
Communication with BMS	CAN									
Efficiency										
Max. Efficiency	98.1%	98.1%	98.2%	98.2%	98.3%	98.3%	98.3%	98.3%	98.5%	98.5%
Euro Efficiency	97.5%	97.5%	97.5%	97.5%	97.6%	97.6%	97.8%	97.8%	98%	98.1%
General Data										
Dimension (W*H*D)	560*430*250 mm									
Weight	20kg	20kg	23kg	23kg	23kg	29kg	29kg	29kg	29kg	29kg
Mounting Method	Wall-mounted									
Protection Rating	IP65									
Cooling	Natural Convection		Intelligent Fan							
Operating Temperature Range	-25 °C~+60 °C									
Display	LED & APP									
Communication	Wi-Fi/DRM/CAN/RS485									

Remarks: The range of output Voltage and frequency may vary depending upon different grid codes.



NEW FROM SOLAX

X3-HYBRID G4



X3-Hybrid-D/M

5.0kW/6.0kW/8.0kW
10.0kW/12.0kW/15.0kW

Features

High-efficient

- 200% PV oversized and up to 110% AC overload output
- Higher efficiency on charging and discharging, up to 97.5%
- Built-in shadow tracking function

Economic

- 16A DC single string input current, support high power solar panel
- Up to 150% PV input
- Store the surplus energy from PV to battery
- Low start output voltage makes inverter longer working time
- Less energy loss on battery to inverter

Intelligent

- 150% EPS output, 10s
- Switchover time <10ms
- Quick configuration with U-disk
- Lithium-ion & Lead-acid battery compatible
- CT compatible, loads respond within 0.3s
- Intelligent loads management (e.g., Heat pump)
- On & Off-grid parallel function, up to 150kW
- 5 work modes, 2 charging periods available
- VPP ready, ancillary service in power market
- Three-phase unbalanced output Maximum 5kW output power on single phase at most

Safe

- IP65 protection level
- Integrated SPD



X3-HYBRID G4 (THREE PHASE)

X3-HYBRID-5.0-D
X3-HYBRID-5.0-M

X3-HYBRID-6.0-D
X3-HYBRID-6.0-M

X3-HYBRID-8.0-D
X3-HYBRID-8.0-M

X3-HYBRID-10.0-D
X3-HYBRID-10.0-M

X3-HYBRID-12.0-D
X3-HYBRID-12.0-M

X3-HYBRID-15.0-D
X3-HYBRID-15.0-M

DC INPUT

Max. PV array power [Wp]	10000	12000	16000	20000	24000	30000
Max. PV input power (PV1+PV2) [Wp]	PV1:4000 / PV2:4000	PV1:5000 / PV2:5000	PV1:8500 / PV2:5000	PV1:10500 / PV2:6000	PV1:11000 / PV2:7000	PV1:11000 / PV2:7000
Max. PV input voltage [V]	1000	1000	1000	1000	1000	1000
Start output voltage [V]	200	200	200	200	200	200
Nominal input voltage [V]	640	640	640	640	640	640
MPP voltage range [V]	180 ~ 950	180 ~ 950	180 ~ 950	180 ~ 950	180 ~ 950	180 ~ 950
No. of MPP trackers / Strings per MPP tracker	2 (1 / 1)	2 (1 / 1)	2 (2 / 1)	2 (2 / 1)	2 (2 / 1)	2 (2 / 1)
Max. input current (input PV1 / input PV2) [A]	16 / 16	16 / 16	28 / 16	28 / 16	28 / 16	28 / 16
Max. short circuit current (input PV1 / input PV2) [A]	20 / 20	20 / 20	35 / 20	35 / 20	35 / 20	35 / 20

AC INPUT & OUTPUT

Nominal AC output power [W]	5000	6000	8000	10000	12000	15000
Max. AC output apparent power [VA]	5500	6600	8800	11000	13200	15000
Max. AC output current [A]	8.1	9.7	12.9	16.1	19.3	24.1
Max. AC input apparent power [VA]	10000	12000	16000	20000	20000	20000
Max. AC input current [A]	16.1	19.3	25.8	32.0	32.0	32.0
Nominal AC voltage [V]	415 / 240; 400 / 230; 380 / 220					
Nominal grid frequency [Hz]	50 / 60					
Displacement power factor	0.8 leading ~ 0.8 lagging					
THDi (rated power) [%]	< 3					

BATTERY DATA

Battery type	Lithium-ion battery / Lead-acid Battery					
Battery voltage range [V]	180 ~ 800					
Max. continuous charge / discharge current [A]	30					

EPS(OFF-GRID OR BACK-UP) OUTPUT (WITH BATTERY)

Nominal output power [W]	5000	6000	8000	10000	12000	15000
Peak apparent power [VA]	12000, 10s	12000, 10s	18000, 10s	18000, 10s	22500, 10s	22500, 10s
Max.continuous current [A]	7.2	8.7	11.6	14.5	17.5	21.8
Nominal voltage [V]; Frequency [Hz]	400 / 230; 50 / 60					
Switch time [ms]	< 10					
Parallel operation	YES					

SYSTEM DATA

Max. efficiency [%]	98.0	
Euro. efficiency [%]	97.7	
Battery charge / discharge efficiency [%] ^①	98.5 / 97.5	
Degree of protection	IP65	
Operating temperature range [°C]	-35 ~ +60 (Derating above +45)	
Max. operation altitude [m]	< 3000	
Relative humidity [%]	0 ~ 100	
Typical noise emission [dB]	< 35	< 45
Storage temperature [°C]	-40 ~ +70	
Dimensions (WxHxD) [mm]	503 x 503 x 199	
Net weight [kg]	30	
Cooling concept	Nature cooling	Smart cooling
Communication interfaces	CT / Meter (optional), External control RS485, Pocket WiFi (Optional: Pocket Lan / 4G), DRM, USB Upgrade, NTC (optional)	

POWER CONSUMPTION

Internal consumption (night) [W]	< 40W for standby, < 5W for idle
----------------------------------	----------------------------------

STANDARD

Safety	EN/IEC62109-1 / -2
EMC	EN61000-6-1 / 2 / 3 / 4; EN61000-3-2 / 3 / 11 / 12
Certification	VDE4105, G99, G98, AS4777, EN50549, CEI 0-21, IEC61727, PEA / MEA, NRS-097-2-1, RD1699, TOR

①: PV to BAT Max. efficiency 98.5%, BAT to AC Max. efficiency 97.5%.

V2.6. Information may be subject to modify without notice. 650.00010.00



SOLAX X3-ULTRA



Features

Economic

- Maximum 200% oversize and 200% PV input power
- Maximum 36A input current per MPPT, support high power solar panel

Intelligent

- AI ready, forecasting solar generation and home consumption, smart energy management strategy
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- Micro-grid ready, supporting a variety of scenarios, both on-grid and off-grid, balancing power between PCS and Hybrid in real time
- Support 7×24h scheduling mode
- Support Wireless meter solution
- Dual independent battery ports are ready to expand battery capacity free

Robust

- Robust back-up ability, switch over time <10ms, up to 200% EPS output for 10s, support half-wave loads
- Stronger, EPS operation without battery

Safe

- IP65 protection level
- AC&DC SPD type II, always guarding the inverter
- AFCI optional

	X3-ULT-15K	X3-ULT-19.9K	X3-ULT-20K	X3-ULT-25K	X3-ULT-30K
INPUT PV					
Max.recommended PV array power [Wp]	30000	40000	40000	50000	60000
Max.input DC power [W]	30000	40000	40000	50000	60000
Max.DC voltage [V]			1000		
Nominal DC operating voltage [V]			600		
No. of MPP trackers / Strings per MPP tracker	2 (2 / 2)	2 (2 / 2)	2 (2 / 2)	3 (2 / 2 / 2)	3 (2 / 2 / 2)
Max. input current (input PV1 / input PV2 / input PV3) [A] ^①	PV1: 36 / PV2: 36	PV1: 36 / PV2: 36	PV1: 36 / PV2: 36	PV1: 36 / PV2: 36 / PV3: 36	PV1: 36 / PV2: 36 / PV3: 36
Max. short circuit current (input PV1 / input PV2 / input PV3) [A]	PV1: 45 / PV2: 45	PV1: 45 / PV2: 45	PV1: 45 / PV2: 45	PV1: 45 / PV2: 45 / PV3: 45	PV1: 45 / PV2: 45 / PV3: 45
MPPT voltage range [V]	160 - 950	160 - 950	160 - 950	160 - 950	160 - 950
Start output voltage [V]	200	200	200	200	200
OUTPUT AC(On-Grid)					
Nominal AC power [VA]	15000	19999	20000	25000	30000 (AS 4777 29999)
Max. apparent AC power [VA]	16500	19999	22000	27500	30000 (AS 4777 29999)
Rated grid voltage (AC voltage range) [V]			3P4W, 400 / 230		
Rated grid frequency [Hz]			50 / 60		
Nominal AC current [A]	21.8	29.0	29.0	36.3	43.5
Max. AC current [A]	24.0	29.0	31.9	39.9	43.5
Displacement power factor			1 (- 0.8 ~ 0.8)		
Total harmonic distortion (THDi, rated power) [%]			< 3		
INPUT AC					
Nominal AC power [VA]	15000	19999	20000	25000	30000
Nominal AC current [A]	21.8	29.0	29.0	36.3	43.5
Max. AC current [A]	25.0	30.4	33.4	41.7	45.5
Rated grid voltage (AC voltage range) [V]			3P4W, 400 / 230		
Rated grid frequency [Hz]			50 / 60		
BATTERY					
Battery type			Lithium - ion		
Battery voltage range [V]			180 - 800		
Max. charge / Discharge current [A]			60 (30 × 2)		
EPS OUTPUT(WITH BATTERY)					
EPS peak power [VA]			2 time of rated power, 10s		
EPS rated power [VA]	15000	19999	20000	25000	30000
EPS rated voltage [V], Frequency [Hz]			400 / 230; 50 / 60		
EPS rated current [A]	21.8	29.0	29.0	36.3	43.5
Switchover time [ms]			< 10		
Total harmonic distortion (THDv, linear Load) [%]			< 3		
POWER CONSUMPTION					
Internal consumption (night) [W]			< 5		
PROTECTION					
Anti-Islanding protection			Yes		
DC reverse polarity protection			Yes		
Insulation monitoring			Yes		
Residual current monitoring			Yes		
AC overcurrent protection			Yes		
AC short-circuit protection			Yes		
AC overvoltage protection			Yes		
Over-heat protection			Yes		
Battery reverse charging from grid			Yes		
Surge protection			Type II, DC and AC		
AFCI			OPT		

EFFICIENCY

Max. efficiency / European efficiency	98.0% / 97.7%	98.0% / 97.7%	98.0% / 97.7%	98.0% / 97.7%	98.0% / 97.7%
Rated battery charge / Discharge efficiency	98.5% / 97.0%	98.5% / 97.0%	98.5% / 97.0%	98.5% / 97.0%	98.5% / 97.0%

STANDARD

Safety	EN / IEC62109 - 1 / - 2				
EMC	EN61000 - 6 - 1 / 2 / 3 / 4; EN61000 - 3 - 11 / 12; EN 5011; IEC 62920				
Certification	VDE4105 / G99 / AS4777 / EN50549 / CEI 0 - 21 / IEC61727 / PEA / MEA / NRS - 097 - 2 - 1 / RD1699 / TOR				

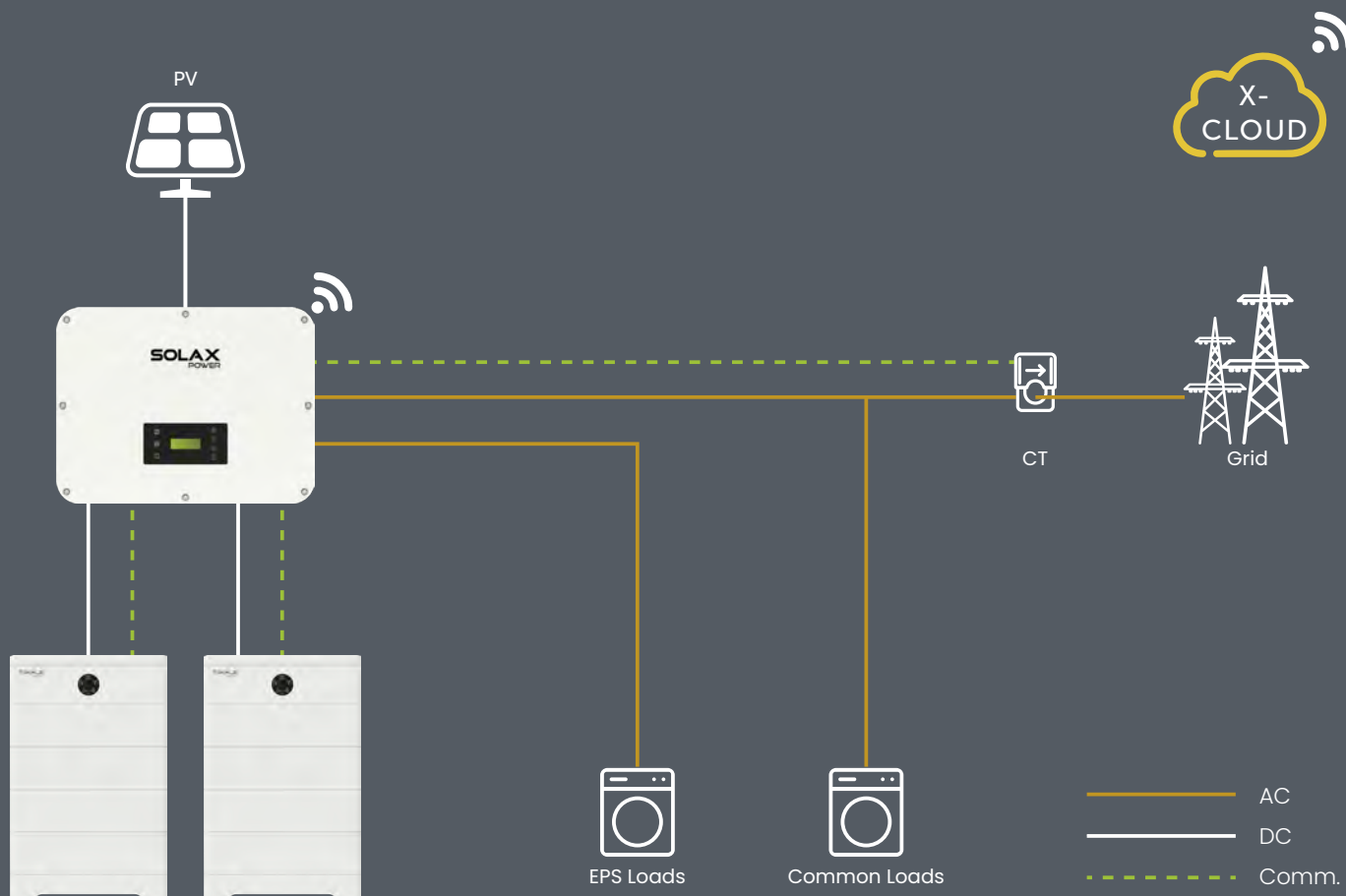
GENERAL DATA

Protection class	IP65
Operating temperature range [°C]	- 35 ~ 60 (Derating above + 45)
Relative humidity [%]	0 ~ 100
Altitude [m]	< 3000
Storage temperature [°C]	- 40 ~ +70
Dimensions (WxHxD) [mm]	696 x 526 x 240
Weight [kg]	47
Cooling concept	Smart cooling
Topology	Transformerless
Communication	Modbus (RS485), Meter (RS485), DI x 5, DO x 2

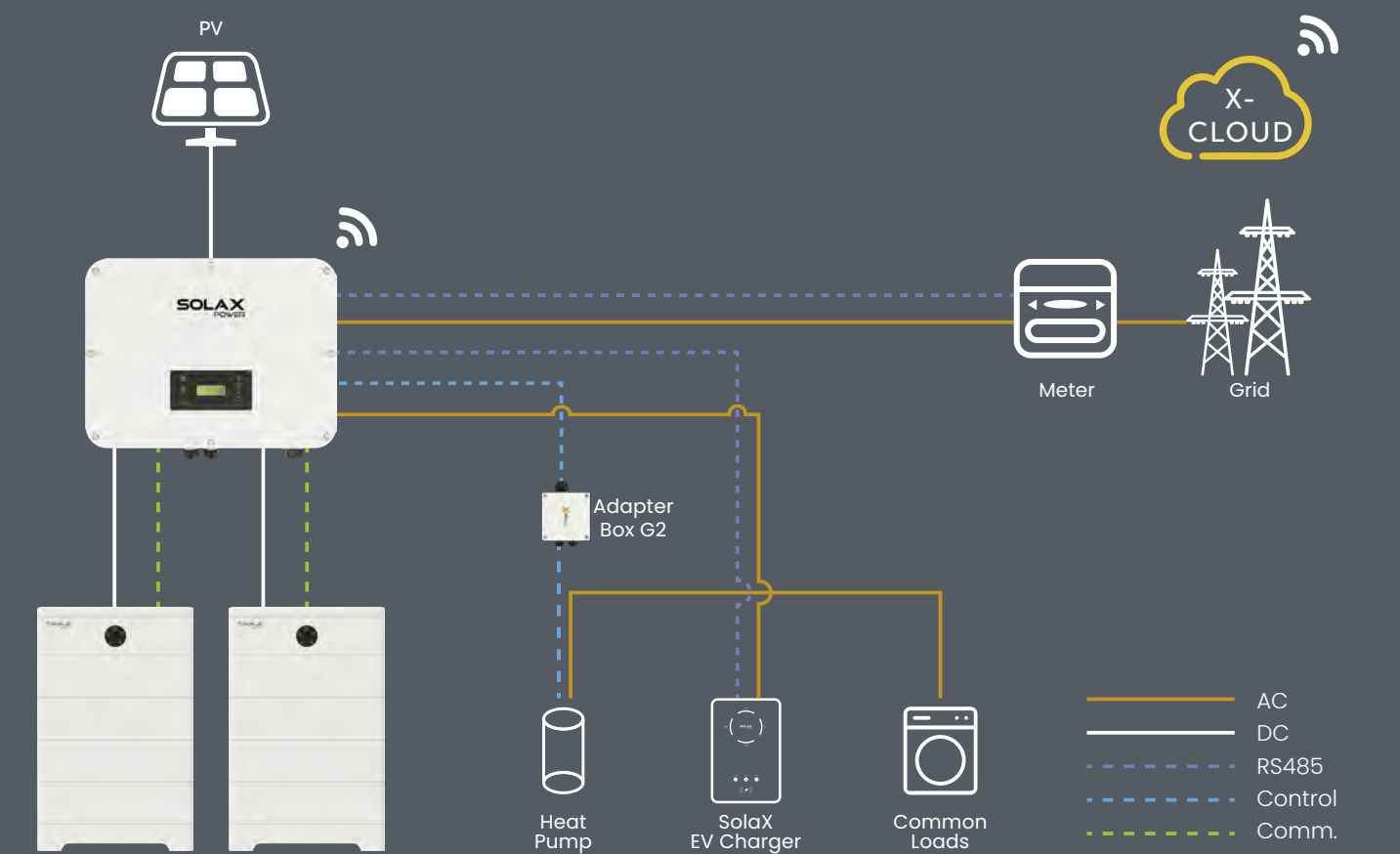
①: Input PV3 only available for 25K and 30K.

TYPICAL SCENARIO

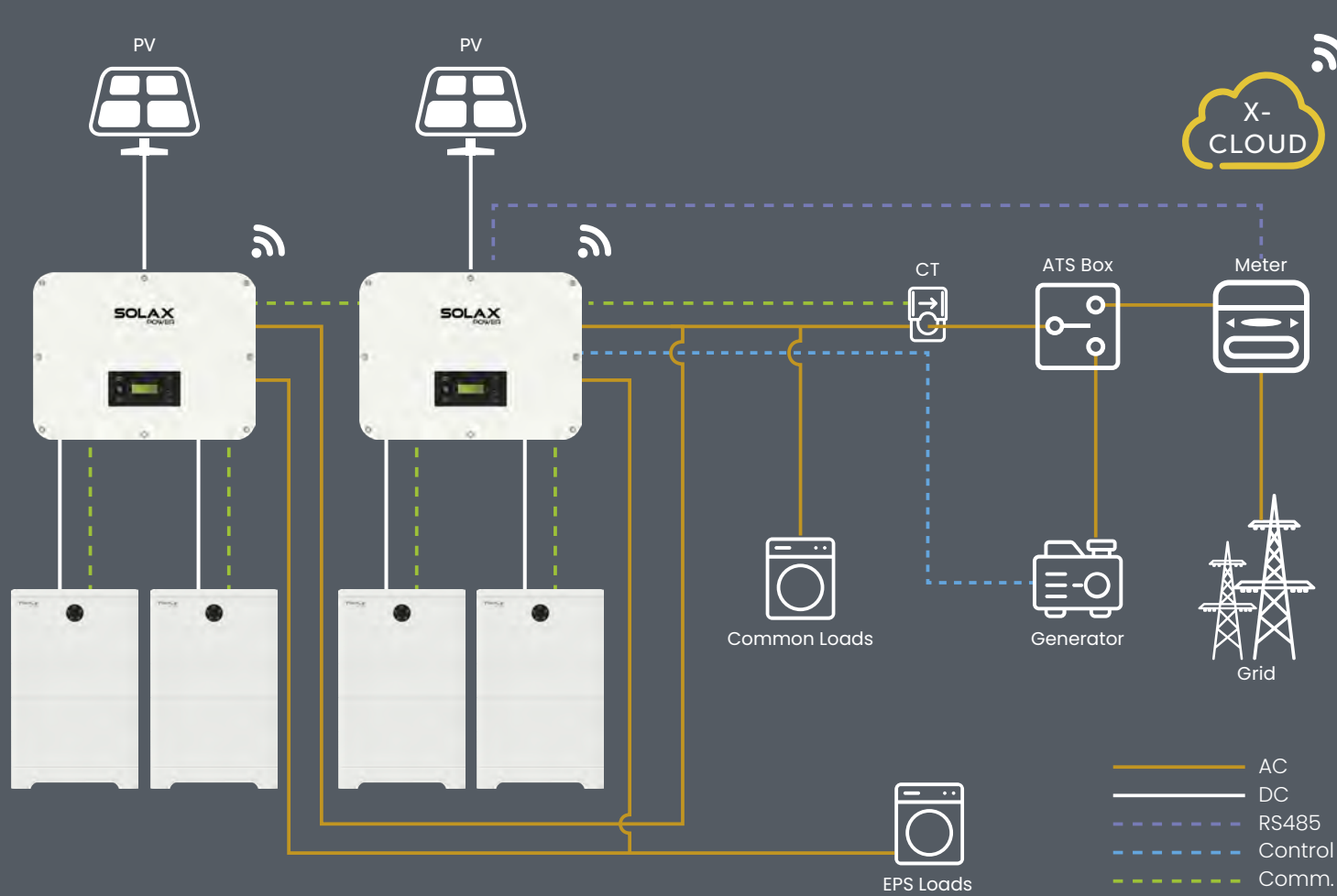
PARTIAL SOLUTION



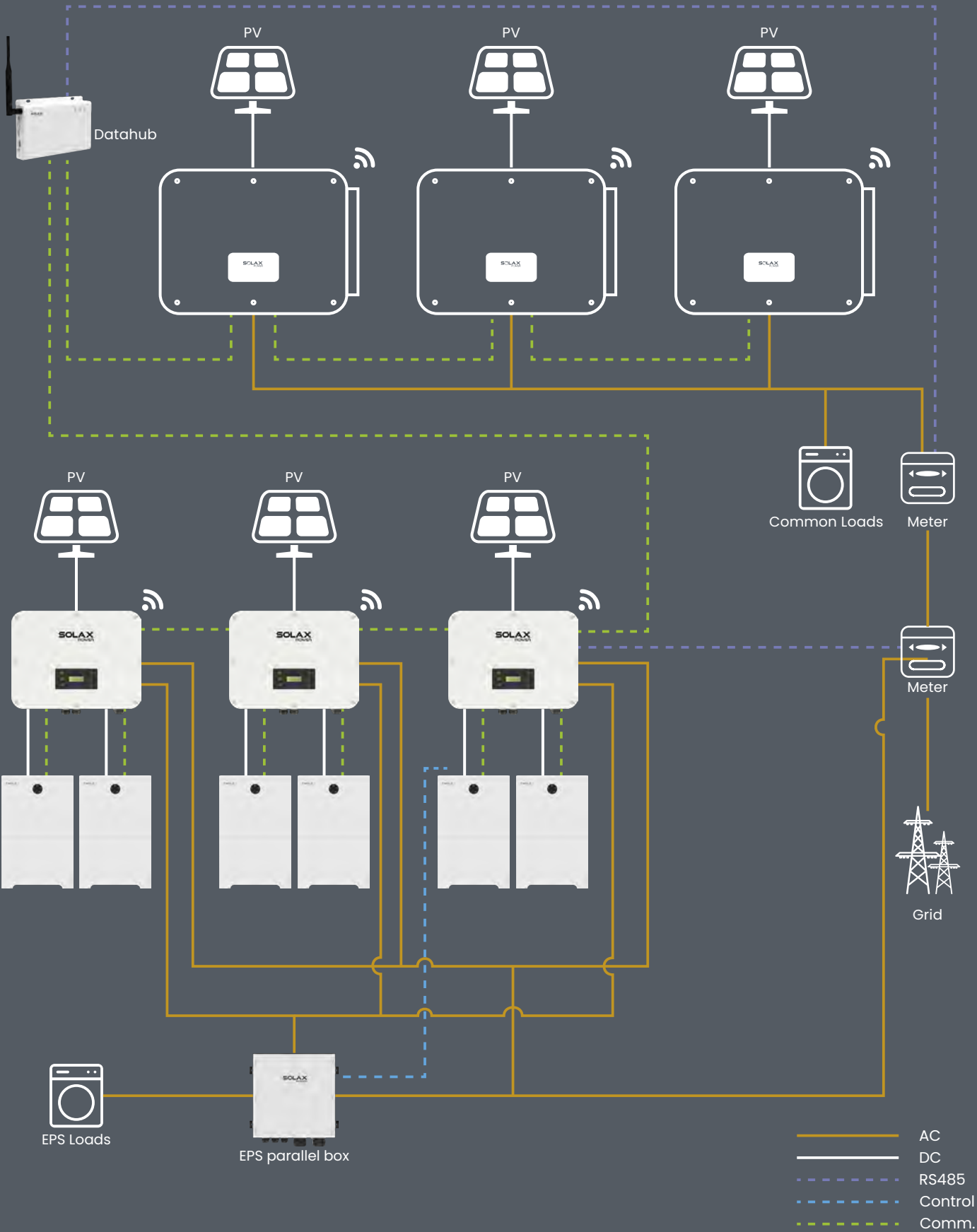
WHOLE HOME BACKUP SOLUTION



PARALLEL & GENERATOR INTEGRATED SOLUTION



0 INJECTION SOLUTION



Single-phase Low-voltage Residential Hybrid Inverter



X1-HYB-LV

3.0kW / 3.7kW / 4.0kW
5.0kW / 6.0kW



Smart Management

- Single unit UPS-level switchover time < 4 ms
- Global MPP scan for optimal energy harvest
- Smart loads management
- CT compatibility with fast load response in just 0.3 seconds



Assured Reliability

- Battery terminal temperature detection
- IP65 protection degree
- Type II SPD on AC&DC side
- Optional AFCI protection*



High Performance

- 200% PV oversizing and up to 110% AC output
- 200% peak EPS power for 10 s
- Max. 120A charging / discharging current
- Low start-up voltage for longer operation



Flexible Adaptability

- Max. 10pcs parallel for on-grid and off-grid*
- Microgrid and generator function for versatile operations*
- Max. 16A DC input current for high-power solar panel

** Feature to be upgraded in the future*

X1-HYB-3.0-LV
X1-HYB-3.7-LV
X1-HYB-4.0-LV
X1-HYB-5.0-LV
X1-HYB-6.0-LV

PV INPUT					
Max. recommended PV array power	6000 Wp	7360 Wp	8000 Wp	10000 Wp	12000 Wp
Max. PV input voltage ^①	550 V				
Nominal PV input voltage	360 V				
MPPT voltage range ^②	80 ~ 520 V				
Start-up voltage	110 V				
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)				
Max. input current per MPPT(MPPT1/2)	16 A / 16 A				
Max. input short circuit current per MPPT(MPPT1/2)	20 A / 20 A				
AC INPUT & OUTPUT(ON-GRID)					
Rated output power	3000 W	3680 W	4000 W	5000 W	6000 W
Max. output apparent power	3300 VA	3680 VA	4400 VA	5000 VA	6000 VA
Max. output continuous current	15.0 A	16.0 A	20.0 A	22.7 A	27.3 A
Nominal AC voltage	1 / N / PE, 220 / 230 / 240 V				
Max. AC input apparent power	6000 VA	7360 VA	8000 VA	9200 VA	
Max. AC input current	26.1 A	32.0 A	34.8 A	40.0 A	
Nominal AC frequency	50 Hz / 60 Hz				
Adjustable Power Factor range	~ 1 (0.8 lagging to 0.8 leading)				
THDi (rated power)	< 3%				
BATTERY					
Battery type	Lithium / Lead - acid				
Battery voltage range	40 ~ 60 V				
Max. charge / discharge current	75 A			120 A	
EPS (OFF-GRID) OUTPUT (WITH BATTERY)					
Rated EPS output voltage, frequency	230 V, 50 Hz / 60 Hz				
Peak EPS output power	6000 VA, 10 s	7360 VA, 10 s	8000 VA, 10 s	10000 VA, 10 s	12000 VA, 10 s
Switchover time	< 4 ms				
EFFICIENCY					
Max. efficiency	97.6%				
European efficiency	97.0%				
ENVIRONMENT LIMIT					
Ingress protection	IP65				
Operating ambient temperature range ^③	-25 ~ 60°C				
Max. operating altitude	3000 m				
Relative humidity	4 ~ 100% RH (condensing)				
GENERAL					
Dimensions (W × H × D)	397 × 490 × 201 mm				
Net weight	16.5 kg			17.3 kg	
Cooling concept	Nature cooling			Smart cooling	
Communication interfaces	CAN, RS485, CT, Meter, NTC, WiFi, WiFi+LAN				
Topology	Transformerless for PV side / HF for battery side				
Certificates and approvals	NRS 097-2-1, IEC 61727, IEC 62116, PEA, MEA, BIS, EN IEC 62109-1 / -2				
PROTECTION					
Protections	Over / under voltage protection, DC isolation protection, DC reverse-polarity protection, Back feed current monitoring, Residual current detection, Active anti-islanding method, Over temperature protection				
Arc-fault circuit interrupter (AFCI)	optional				

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter

② Input voltage exceeding the MPPT voltage range may trigger inverter protection

③ Derating above +45°C

Three-phase Low-voltage Residential Hybrid Inverter



X3-NEO-LV

5kW / 8kW / 10kW
12kW / 15kW



Smart Management

- Single unit UPS-level switchover time <3 ms
- Dedicated load interface for intelligent load management
- Global MPP scan for optimal energy harvest



Assured Reliability

- Battery terminal temperature detection
- IP65 protection degree
- Type II SPD on AC&DC side
- Optional AFCI protection*



High Performance

- 200% PV oversizing and up to 110% AC output
- 200% peak EPS power for 10 s
- Max. 300A charging / discharging current
- Low start-up voltage for longer operation



Flexible Adaptability

- Max. 10pcs parallel for on-grid and off-grid*
- Microgrid and generator function for versatile operations
- Max. 36A DC input per MPPT, optimized for high-power solar panel

* Feature to be upgraded in the future

X3-NEO-5K-LV
X3-NEO-8K-LV
X3-NEO-10K-LV
X3-NEO-12K-LV
X3-NEO-15K-LV

PV INPUT					
Max. recommended PV array power	10 kWp	16 kWp	20 kWp	24 kWp	30 kWp
Max. PV input voltage ^①	1000 V				
Nominal PV input voltage	640 V				
Operating voltage range	160 ~ 950 V				
MPPT voltage range ^②	160 ~ 950 V				
Start-up voltage	150 V				
No. of MPP trackers / Strings per MPP tracker	2 / (1 / 1)		2 / (2 / 1)	2 / (2 / 2)	
Max. input current per MPPT(MPPT1/2)	18 A / 18 A		36 A / 18 A	36 A / 36 A	
Max. input short circuit current per MPPT(MPPT1/2)	25 A / 25 A		50 A / 25 A	50 A / 50 A	
AC INPUT&OUTPUT (On-Grid)					
Rated output power	5 kW	8 kW	10 kW	12 kW	15 kW
Rated output current	7.3 A	11.6 A	14.5 A	15.3 A	17.4 A
Max. output apparent power	5.5 kVA	8.8 kVA	11 kVA	13.2 kVA	16.5 kVA
Max. output continuous current	8.4 A	13.4 A	16.8 A	20.0A	25.0 A
Nominal AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V				
Max. AC input apparent power	10 kVA	16 kVA	20 kVA	24 kVA	30 kVA
Max. AC input current	15.2 A	24.3 A	30.4 A	36.4 A	45.5 A
Nominal AC frequency	50 Hz / 60 Hz				
AC frequency range ^③	50 ± 5 Hz / 60 ± 5 Hz				
Adjustable Power Factor range	~ 1 (0.8 lagging to 0.8 leading)				
THDi (rated power)	< 3%				
BATTERY					
Battery type	Lithium / Lead - acid				
Battery voltage range	40 ~ 60 V				
Max. charge / discharge current	125 A	200 A	250 A	280 A	300 A
EPS (OFF-GRID) OUTPUT (WITH BATTERY)					
Rated EPS output power	5 kVA	8 kVA	10 kVA	12 kVA	15 kVA
Peak EPS output power	2 times of rated power, 10 s				
Switchover time	< 3 ms				
EFFICIENCY					
Max. efficiency	97.6%				
European efficiency	97.0%				
ENVIRONMENT LIMIT					
Ingress protection	IP65				
Operating ambient temperature range ^④	-25 ~ 60°C				
Max. operating altitude	3000 m				
Relative humidity	4 ~ 100% RH (condensing)				
Overvoltage Category	Mains: III, Battery: II, PV: II				
GENERAL					
Dimensions (W × H × D)	520 × 705 × 258 mm				
Net weight	44.6 kg				
Cooling concept	Smart cooling				
Communication interfaces	LED+LCD / CAN, RS485, CT, Meter, NTC, WiFi+LAN				
Power consumption (night)	< 15 W				
Topology	Non-isolated				
Certificates and approvals	EN IEC 62109-1 / -2, NRS 097-2-1, IEC 61727, IEC 62116, PEA, MEA, BIS				
PROTECTION					
Protections	Over / under voltage protection, DC isolation protection, DC reverse-polarity protection, Grid monitoring, DC injection monitoring, Back feed current monitoring, Residual current detection, Over temperature protection				
Active anti-islanding method	Frequency shift				
Surge protection (DC / AC)	DC: Type II, AC: Type II				

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter

② Input voltage exceeding the MPPT voltage range may trigger inverter protection

③ The AC frequency range may vary from different country codes

④ Derating above +45°C

H3 & AC3 SERİSİ

ÜÇ FAZLI, HİBRİT/AC İNVERTÖR

Fox ESS'in çıkarı açan Hibrit ve AC invertör serisiyle gece gündüz güneşin gücünden yararlanın.

Fox ESS'in hibrit serisi gelişmiş özelliklerle dolu olup kendi yüksek voltajlı bataryalarımızla uyumludur. H3 Serisi, yeni bir Invertör sınıfıdır.



Fox ESS depolama çözümleri, gelişmiş ve sezgisel uygulama tabanlı uzaktan kontrol ve izleme fonksiyonları ile sunulmaktadır.



Kolay Kurulum

Esnek konfigürasyon, tak çalıştır kurulum, dahili sigorta koruması.



Yüksek Voltaj

Maksimum şarj-deşarj verimliliği için yüksek voltajlı bataryalarla uyumludur.



IP65 Koruma

Maksimum tasarım esnekliği ve dayanıklılık. Dış ortam kurulumuna uygun.



Uzaktan İzleme

Akıllı telefon uygulaması ya da Web Portalı ile uzaktan izlenebilir.



12kW
ya kadar
Şarj/ Deşarj

RAFİNE – GÜÇLÜ – ESNEK

BATARYA GENİŞLETME KOLAY YÜKSELTME



Sadece ilave bataryalar ekleyerek sistemizi kolayca genişletin. 33,24 kWh'ye kadar depolama kapasitesi sağlayan üç batarya serisi arasından seçim yapabilirsiniz. Farklı kurulum gereksinimlerine göre sistemin kapasitesini genişletmenize olanak sağlamak için maksimum 10 invertör paralel olarak bağlanabilir.

Fox-ESS serisi hakkında daha fazla bilgi için:

WWW.FOX-ESS.COM



TEKNİK ÖZELLİKLER

Model	H3-5.0-E AC3-5.0-E	H3-6.0-E AC3-6.0-E	H3-8.0-E AC3-8.0-E	H3-10.0-E AC3-10.0-E	H3-12.0-E
PV GİRİŞ (Sadece Hibrit Kullanım)					
Maks. Giriş Gücü [W]	A:4000 B:4000	A:4000 B:4000	A:8000 B:5000	A:8000 B:5000	A:8000 B:5000
Maks. Giriş Voltajı [V]			1000 [1]		
Başlama Giriş Voltajı [V]			160		
Nominal Giriş voltajı [V]			720		
MPPT Çalışma Voltaj Aralığı [V]			160 ~ 950		
Maks. Giriş Akımı [A]	14/14	14/14	26/14	26/14	26/14
Maks. Kısa Devre Akımı [A]	16/16	16/16	32/16	32/16	32/16
Bağımsız MPPT Sayısı			2		
MPPT Başına Dizi Sayısı	1/1	1/1	2/1	2/1	2/1
BATARYA BAĞLANTISI					
Batarya Tipi			Lityum Batarya (LFP)		
Batarya Voltaj Aralığı [V]			180 ~ 600 [1]		
Maks. Şarj/Deşarj Akımı [A]			26.0		
Haberleşme Arayüzü	CAN (invertör ile haberleşme),RS485 (BMS güncelleme)				
AC GİRİŞ VE ÇIKIŞ (ŞEBEKE)					
Maks. AC Giriş Gücü [VA]	10000	12000	16000	16000	16000
Maks. AC Giriş Akımı (faz başına) [A]	15.2	18.2	24.2	24.2	24.2
Nominal Çıkış Gücü [W]	5000	6000	8000	10000	12000
Maks. Görünür Çıkış Gücü [VA]	5500	6600	8800	11000	13200
Nominal Çıkış Akımı (faz başına) [A]	7.2	8.7	11.6	14.5	17.4
Maks. Çıkış Akımı (faz başına) [A]	8.3	10.0	13.3	16.7	20.0
Nominal Şebeke Voltajı [V]	3L/N/PE 380/220; 400/230; 415/240				
Nominal Şebeke Frekansı [Hz]	50/60				
Güç Faktörü	1 (Ayarlanabilir, 0.8 leading - 0.8 lagging)				
Toplam Harmonik Bozulma [%]	<3 @Nominal Güç				
EPS ÇIKIŞ					
Maks. Görünür Çıkış Gücü [VA]	5000	6000	8000	10000	12000
Tepe Görünür Çıkış Gücü (60s) [VA]	10000	12000	14000	15000	15000
Maks. Akım (faz başına) [A]	7.2	8.7	11.6	14.5	17.4
Nominal Çıkış Voltajı [V]	3L/N/PE 400/230				
Nominal Çıkış Frekansı [Hz]	50/60				
Güç Faktörü	1 (Ayarlanabilir, 0.8 leading - 0.8 lagging)				
Toplam Harmonik Bozulma (doğrusal yük) [%]	<3 @Nominal Güç				
Geçiş Zamanı [ms]	<20				
VERİM					
Euro Verim [%]	97.20	97.20	97.30	97.30	97.30
Maks. Verim [%]	97.80	97.80	98.00	98.00	98.00
Maks. Batarya Şarj Verimi (PV'den BAT) (@tam yük) [%]			98.50		
Maks. Batarya Deşarj Verimi (BAT'dan AC) (@tam yük) [%]			97.00		
KORUMA					
İzolasyon İzleme			Evet		
Artık Akım İzleme			Evet		
DC Ters Polarite Koruması			Evet		
Anti-Adalanma Koruması			Evet		
AC Kısa Devre Koruması			Evet		
AC Aşırı Akım/Gerilim Koruması			Evet		
DC Şalter			Evet		
Dalgalanma Koruması			DC: Tip II, /AC: Tip II		
AFCI			Opsiyonel		
GENEL BİLGİLER					
Boyutlar (WxHxD) [mm]			449*519*198		
Ağırlık [kg]			28		
Kurulum			Duvara Monte		
Topoloji			İzolasyonsuz		
Soğutma Metodu		Doğal		FAN Soğutma	
Gürültü Emisyonu [db]		35		45	
Maks. Çalışma Rakımı [m]			2000		
Çalışma Sıcaklık Aralığı [°C]			-25 ~ 60		
Bağıl Nem (Yoğuşmasız) [%]			0 ~ 100		
Koruma Derecesi			IP65		
Bekleme Tüketimi [W]			< 15		
İzleme Modülü			WiFi, LAN, 4G, GPRS (Opsiyonel)		
Haberleşme			2*RS485, DRM, Dalgalanma Kontrolü, USB		
Ekran			LCD, App, Website		
STANDARDA UYGUNLUK (İSTEĞE GÖRE DAHA FAZLA MEVCUTTUR)					
Güvenlik	EN 62109-1, EN 62109-2, EN 62477-1				
Elektromanyetik Uyumluluk	IEC 61000-6-1, IEC 61000-6-3				
Şebeke Yönetmeliği	EN50549-1, C10/11, VDE-AR-N 4105, G98, CEI 0-21				

*Talep üzerine ve özelleştirilmiş olarak daha fazla teknik özellik mevcuttur.

[1] 1000 V sistemler için, maksimum PV çalışma voltajı 950V'dir.

[2] Minimum batarya çalışma voltajı 150V'dir.



DATASHEET

Three-Phase Hybrid /AC Inverter

H3-Pro-15.0 / 20.0 / 22.0 / 24.9 / 25.0 / 29.9 / 30.0
AC3-Pro-15.0 / 20.0 / 22.0 / 24.9 / 25.0 / 29.9 / 30.0

H3 PRO SERIES

Three-Phase Hybrid /AC Inverter



Fox ESS storage solutions are available with advanced and intuitive app based remote control and monitoring functionality.



Easy Installation

Flexible configuration, plug and play set-up, built-in fuse protection.



High Voltage

Includes high-voltage batteries for maximum round-trip efficiency.



IP65 Rated

Engineered to last with maximum flexibility. Suitable for outdoor installation.



Remote Monitoring

Monitor your system remotely via smartphone app or web portal.



REFINED – POWERFUL – FLEXIBLE

BATTERY EXPANSION EASY UPGRADE



Easily expand your system by adding extra batteries. There are three battery series you can choose from, which enables a storage capacity of up to 86.40 kWh. A max. of 10 storage inverters can be connected in parallel which allows you to enlarge the system scale based on different installation requirements.

For more information about the Fox ESS range, visit:
www.fox-ess.com



TECHNICAL SPECIFICATIONS

HYBRID INVERTER MODEL: AC INVERTER MODEL:	H3-Pro-15.0 AC3-Pro-15.0	H3-Pro-20.0 AC3-Pro-20.0	H3-Pro-22.0 AC3-Pro-22.0	H3-Pro-24.9 AC3-Pro-24.9	H3-Pro-25.0 AC3-Pro-25.0	H3-Pro-29.9 AC3-Pro-29.9	H3-Pro-30.0 AC3-Pro-30.0
PV INPUT(ONLY FOR HYBRID)							
Max.Recommended DC Power [W] ^[1]	22500	30000	33000	37500	37500	45000	45000
Max.DC Voltage [V] ^[2]				1000			
Normal DC Operating Voltage [V]				750			
Max. Input Current [A]	32	32	32	32	32	32	32
Max. Short Circuit Current [A]	40	40	40	40	40	40	40
MPPT Voltage Range [V]				150 ~ 850			
MPPT Voltage Range [V] (full load)	170 ~ 850	230 ~ 850	250 ~ 850	280 ~ 850	280 ~ 850	340 ~ 850	340 ~ 850
Start-up Voltage [V]				160			
No. of MPP Trackers				3			
Strings Per MPP Tracker	2/2/2	2/2/2	2/2/2	2/2/2	2/2/2	2/2/2	2/2/2
Max. Inverter Backfeed Current to the Array				0			
BATTERY							
Battery Type				Lithium Battery			
Battery Voltage [V]				150 ~ 800			
Full AC Load Battery Voltage [V]	160 ~ 790	220 ~ 790	240 ~ 790	270 ~ 790	270 ~ 790	330 ~ 790	330 ~ 790
Max. Charge/ Discharge Current [A]	50+50	50+50	50+50	50+50	50+50	50+50	50+50
Number of Battery Input	2	2	2	2	2	2	2
Communication Interface				CAN			
AC OUTPUT							
Normal AC Power [VA]	15000	20000	22000	24900	25000	29900	30000
Max. Apparent AC Power [VA]	16500	22000	24200	24900	27500	29900	33000
Rated Grid Voltage (AC Voltage Range) [VAC]				400 / 230 ; 380 / 220 , 3L / N / PE			
Rated Grid Frequency [Hz]				50 / 60 , ±5			
Max. AC Current [A] (Per Phase)	25.0	33.3	36.7	37.7	41.7	45.4	50.0
Power Factor				1(Adjustable from 0.8 Leading to 0.8 Lagging)			
Export Control				YES			
THDI [%]				<3 @Rated Power			
AC INPUT							
Max. AC Power [VA]	22500	30000	33000	35000	35000	35000	35000
Rated Grid Voltage (AC Voltage Range) [V]				400 / 230 ; 380 / 220 , 3L / N / PE			
Rated Grid Frequency [Hz]				50 / 60 , ±5			
Max. AC Current [A] (Per Phase)	34.1	45.5	50.0	53.0	53.0	53.0	53.0
Power Factor				1(Adjustable from 0.8 Leading to 0.8 Lagging)			
EPS OUTPUT							
Max Apparent AC Power [VA]	15000	20000	22000	25000	25000	30000	30000
Peak Apparent AC Power [VA] (60s)	18000	24000	26400	30000	30000	36000	36000
Rated Output Voltage [V]				400 / 230 ; 380 / 220 , 3L / N / PE			
Rated Grid Frequency [Hz]				50 / 60			
EPS Max Current [A] (Per Phase)	22.7	30.3	33.3	37.9	37.9	45.5	45.5
Power Factor				1(Adjustable from 0.8 Leading to 0.8 Lagging)			
Parallel Operation				Yes @Max10PCS			
Switch Time [ms]				<20			
THDV [%]				<3 @Rated Power			
EFFICIENCY							
MPPT Efficiency [%]	99.90	99.90	99.90	99.90	99.90	99.90	99.90
Max. Efficiency [%]	97.80	97.80	97.80	97.80	97.80	97.80	97.80
Max. Battery to AC Efficiency [%]	97.60	97.60	97.60	97.60	97.60	97.60	97.60
Max. PV to Battery Efficiency [%]	98.10	98.10	98.10	98.10	98.10	98.10	98.10
Euro-Efficiency [%]	97.30	97.40	97.40	97.40	97.40	97.40	97.40
PROTECTION							
PV Reverse Polarity Protection				YES			
Battert Reverse Protection				YES			
Anti-Islanding Protection				YES			
Output Short Protection				YES			
Leakage Current Protection				YES			
Insulation Resistor Detection				YES			
Over Voltage Category				III (AC Side) , II (DC Side)			
Reverse Connect Protection				YES			
Over-current Protection / Over-temperature Protection				YES			
AC/DC Surge Protection				Type II/Type II			
AFCI Protection				Optional			
DC SWITCH				Optional			
String Monitoring Function				Optional			
GENERAL DATA							
Dimension (WxHxD) [mm]				600*560*225			
Dimension of Packing (WxHxD) [mm]				720*680*370			
Net Weight [kg]				52.5			
Gross Weight [kg]				57.5			
Installation				Wall-mounted			
Operating Temperature Range [°C]				-25 ~ +60 (Derating at 45)			
Storage Temperature [°C]				-40 ~ +70			
Noise Emission(typical) [dB]	<45	<45	<60	<60	<60	<60	<60
Storage/Operation Relative Humidity [%]				0 ~ 95 (Without Condensation)			
Altitude [m]				<4000			
Protective Class				I			
Ingress Protection				IP65 (for Outdoor Use)			
Standby Consumption [W]				200 for Hot Standby , 18 for Cold Standby			
Idle Mode				YES			
Cooling				Smart FAN Cooling			
Inverter Topology				Non-isolated			
Communication Interface				Meter, WIFI, 4G(optional), DRM, USB, BMS(CAN), RS485			
LCD Display				Backlight 16*4 Character			
Button				Capacitive Touch Sensor *4			
Buzzer				1, Inside (EPS&Earth Fault)			
STANDARD COMPLIANCE MORE AVAILABLE UPON REQUEST)							
Safety				EN 62109-1, EN 62109-2			
EMC				IEC 61000-6-2, IEC 61000-6-3			

*More technical characteristics are available on demand and customized.

[1] Per MPP max. PV input power 15kW.

[2] For 1000V system, Maximum operating voltage is 950V.PV input voltage greater than 955V, PV overvoltage error will be reported.



H3-Plus

THREE-PHASE **HYBRID INVERTER**



LONG BACK UP CAPABILITY

More than 3 hours backup power available.



EPS FUNCTION

Less than 10ms switch time.



HIGH EFFICIENCY

Ensuring optimal energy conversion and minimal losses.



FLEXIBLE APPLICATION

With power range and battery configuration to suit different project requirements.



Advanced System Monitoring
with **FoxCloud V2.0**

Fox ESS H3-Plus is a state-of-the-art hybrid inverter models designed for maximum efficiency and reliability. With outstanding specifications and advanced features it is a market changer in commercial applications.

50kW ...>> 100kW



For more information about the Fox ESS range, visit:
www.fox-ess.com



TECHNICAL SPECIFICATIONS

MODEL	H3-50-Plus	H3-60-Plus	H3-75-Plus	H3-80-Plus	H3-100-Plus
BATTERY SPECIFICATION					
Battery Type			LFP		
Voltage Range [V]			180 ~ 1000		
Max. Charging/Discharging Current [A]			80+80+80		
Battery Port			3		
Cmmunication			CAN		
DC SPECIFICATION					
Max. DC Array Power [kW]	100	120	150	160	200
Max. DC Input Power [kW]	80	96	120	128	160
Max. DC Voltage [V]			1000		
Start Up Voltage [V]			180		
MPPT Voltage Range [V]			180 ~ 850		
Nominal Voltage			650		
MPPT No. / String Per MPPT	4/2	4/2	8/2	8/2	8/2
MPPT Max. Iop [A]			40		
MPPT Max. Isc [A]			55		
AC SPECIFICATION					
Nominal AC Output [kW]	50	60	75	80	100
Max. AC Output [kVA]	55	66	82.5	88	110
Nominal AC Output Current [A]	76.0@380V	91.2@380V	113.9@380V	121.6@380V	152@380V
	72.2@400V	86.6@400V	108.3@400V	115.5@400V	144.4@400V
Max. AC Output Current [A]	83.6@380V	100.3@380V	125.4@380V	133.7@380V	167.2@380V
	79.4@400V	95.3@400V	119.1@400V	127.0@400V	158.8@400V
Max. Bypass Current [A]			300		
Nominal AC Voltage [V]			380V/400V,3W+N+PE Or 3W+PE		
AC Output Voltage Range [Un]			0.8 ~ 1.2		
Nominal AC Input Frequency [Hz]			50/60		
Frequency Range [Hz]			45 ~ 55 / 55 ~ 65		
Power Factor			0.8 Leading ~ 0.8 Lagging		
Max. THD [%]			<3		
DC Injection Current [%]			0.5		
On/off-Grid Switch Time [ms]			<10		
Off-grid			1.5 time rated output @10s		
Umbalance Load [%]			100 Umbalance		
Max. THD (Off-grid) [%]			<3 (Linear Load)		
EFFICIENCY					
Euro Efficiency [%]			97.6		
Max. Efficiency [%]			98.2		
PROTECTION					
DC Input Switch			Support		
Battery Reverse Polarity			Support		
PV Reverse Polarity			Support		
AC Over Current Protection			Support		
AC Output Short Circuit Protection			Support		
DC SPD Protection			Class II		
AC SPD Protection			Class II		
Anti-PID			Support		
ISO Detection			Support		
Residual Current Detection			Support		
Ground Fault Detection			Support		
AFCI			Optional		
String Current Detection			Support		
String Monitoring			Support		
GENERAL SEPECIFICATION					
Dimension (W*H*D) [mm]			700*950*300		
Weight [kg]	100	100	110	110	110
Working Temperature [°C]			-30 ~ 60		
Cooling Method			Smart Air Cooling		
Working Altitude [m]			4000		
Humidity [%]			0~ 100		
Noise [dB]			<70		
Night Consumption [W]			<60		
IP Rating			IP65		
Topology			Non-Isolation		
Display			LED,Wi-Fi+APP		
Communication Ports			USB / RS485 / Bluetooth / Wi-Fi+LAN / 4G(Optional) / CAN		

Fronius GEN24



Designed to empower.

Fronius
Solar Energy

Home
Inverter

GEN24
GEN24 Plus

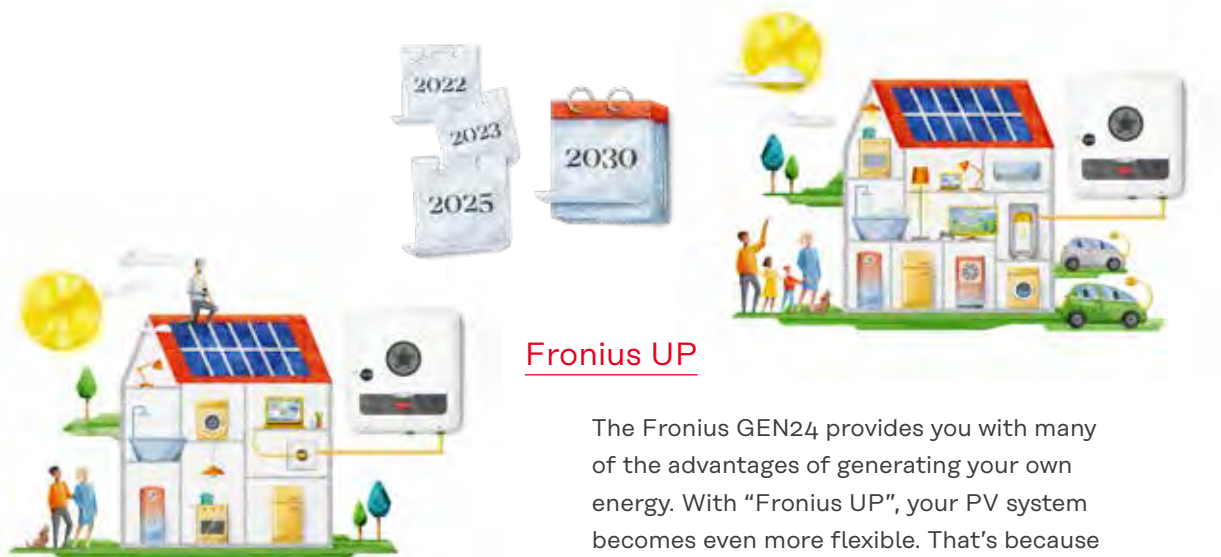
Fronius GEN24. Designed to empower.

The core of your PV system

Your energy revolution, your solution: With the Fronius GEN24 inverter, you can make flexible and direct use of the solar energy you generate at home. With the Fronius GEN24 Plus, on the other hand, you can get 24 hours of sun. That's because a battery storage system can

be connected to this hybrid inverter, making you even less dependent on the grid. Electricity, heating, cooling, e-mobility – everything is possible. Full solar power for your energy revolution with the **Fronius GEN24** and the **Fronius GEN24 Plus**. Designed to empower.





Fronius UP

The Fronius GEN24 provides you with many of the advantages of generating your own energy. With "Fronius UP", your PV system becomes even more flexible. That's because this software update turns the Fronius GEN24 into our Fronius GEN24 Plus hybrid inverter with all its functions and advantages – from the connection of a battery storage system to the "Full Backup" emergency power function.

GEN24 & GEN24 Plus

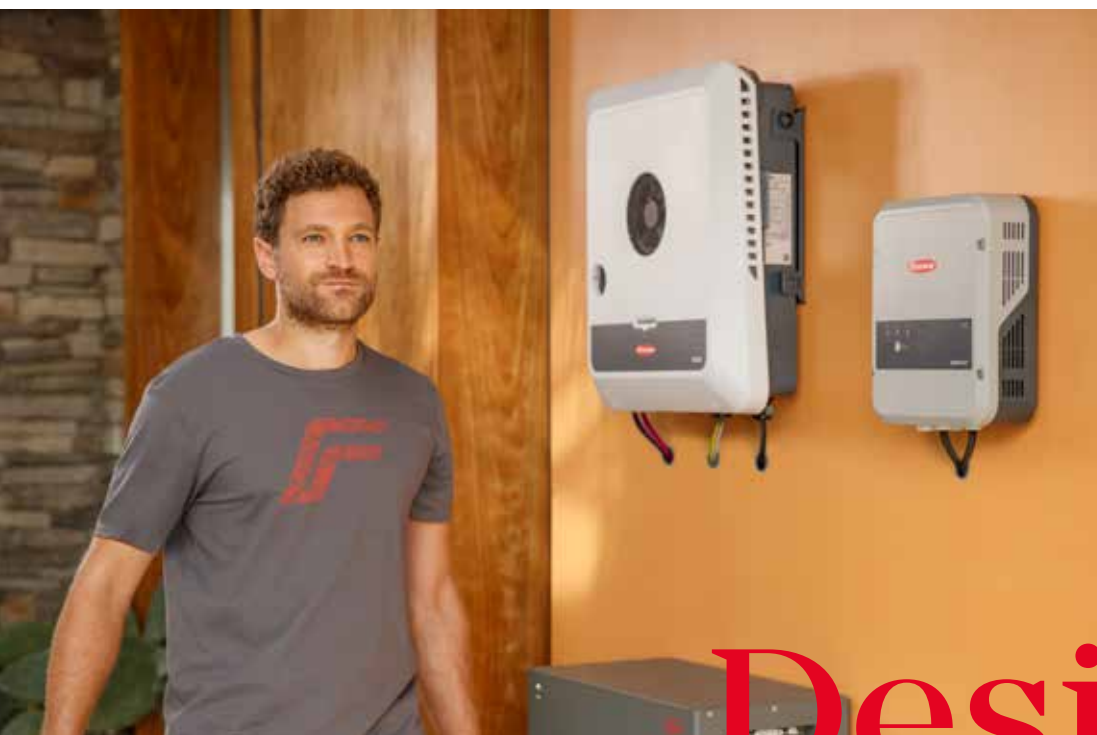


Fronius GEN24 variants

- **Fronius GEN24*** | Basic backup power function PV Point
Primo (single phase) 3–10 kW
Symo (three-phase) 3–10 kW
- **Fronius GEN24 Plus**** | Backup power variants | Battery connection
Primo (single phase) 3–10 kW
Symo (three-phase) 3–10 kW

* Can be upgraded with Fronius UP. Available in selected countries via the webshop.

** The Full Backup option is available for the Primo GEN24 3.0–10.0 Plus and the Symo GEN24 6.0–10.0 Plus.



Designed to empower.

With the Fronius GEN24 and the Fronius GEN24 Plus, you have the flexibility to produce your energy as self-sufficiently as you desire. Whichever customised solution you choose, you will always benefit from simple installation, reliable and comprehensive services, as well as always having the feeling that you are making real savings, both in terms of money and CO2 emissions.



Multi-award winning



reddot award 2019
winner



First class efficiency

Praised by HTW Berlin: The GEN24 Plus led the rankings in the Energy Storage Inspection 2020, 2021 and 2022, thereby confirming its high efficiency in combination with energy storage systems.



GOODWE

ET PLUS+ Serisi 16A 5-10kW I 3 Faz I Hibrit İnverter

ET PLUS+ Serisi, esnek konut ihtiyaçları için piyasadaki en uyarlanabilir seçeneklerden biri olmasını sağlayan teknik güçleri bütünleştirir. Seri, optimum enerji hasadı için yüksek güç üretimi ve şarj gücü, akıllı yük kontrolü ve %100 dengesiz çıkış ile sağlanan esnek uygulamalar ve sürdürülebilir sistem güvenilirliği ve güvenliği değerleri getiriyor. Uygulama senaryolarını genişleten ve öz tüketim oranlarını en üst düzeye çıkaran gerçekten çok yönlü kaliteli bir yatırım parçasıdır.



Akıllı Enerji için Akıllı Kontrol

- Akıllı yük kontrolü
- Tepe Tıraş



Üstün Güvenlik ve Güvenilirlik

- DC tarafında yerleşik Tip II SPD
- IP65 giriş koruması



Dost Canlısı ve Düşünceli Tasarım

- Sessiz çalışma için fansız soğutma
- Zarif ve kompakt tasarım



Esnek ve Uyarlanabilir Uygulamalar

- Pil hazır seçeneği
- %100 dengesiz çıkış

Teknik Veriler	GW5KN-ET	GW6.5KN-ET	GW8KN-ET	GW10KN-ET
Akü Giriş Verileri				
Akü Türü	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Nominal Akü Voltajı (V)	500	500	500	500
Akü Voltaj Aralığı (V)	180 ~ 600	180 ~ 600	180 ~ 600	180 ~ 600
Maks. Sürekli Şarj Akımı (A)	25	25	25	25
Maks. Sürekli Deşarj Akımı (A)	25	25	25	25
Maks. Şarj Gücü (W)	7500	8450	9600	10000
Maks. Deşarj Gücü (W)	7500	8450	9600	10000
PV String Giriş Verileri				
Maks. Giriş Gücü (W)	7500	9700	12000	15000
Maks. Giriş Voltajı (V) ¹	1000	1000	1000	1000
MPPT Çalışma Voltaj Aralığı (V) ²	200 ~ 850	200 ~ 850	200 ~ 850	200 ~ 850
Çalıştırma Voltajı (V)	180	180	180	180
Nominal Giriş Voltajı (V)	620	620	620	620
MPPT Başına Maks. Giriş Akımı (A)	16	16	16	16
MPPT Başına Maks. Kısa Devre Akımı (A)	21.2	21.2	21.2	21.2
MPPT Sayısı	2	2	2	2
MPPT Başına String Sayısı	1	1	1	1
AC Çıkış Verileri (Şebeke üzerinde)				
Kamusal Şebekeye Nominal Görünür Güç Çıkışı (VA)	5000	6500	8000	10000
Kamusal Şebekeye Maks. Görünür Güç Çıkışı (VA) ^{3,4}	5500	7150	8800	11000
Kamusal Şebekeden Maks. Görünür Güç (VA)	10000	13000	15000	15000
Nominal Çıkış Voltajı (V)	400 / 380, 3L / N / PE	400 / 380, 3L / N / PE	400 / 380, 3L / N / PE	400 / 380, 3L / N / PE
Nominal AC Şebeke Frekansı (Hz)	50 / 60	50 / 60	50 / 60	50 / 60
Kamusal Şebekeye Maks. AC Akım Çıkışı (A)	8.5	10.8	13.5	16.5
Kamusal Şebekeden Maks. AC Akım (A)	15.2	19.7	22.7	22.7
Çıkış Gücü Faktörü	~1 (0,8 öndeden 0,8 gecikmeye ayarlanabilir)			
Maks. Toplam Armonik Bozulma	<3%	<3%	<3%	<3%
AC Çıkış Verileri (Yedek)				
Yedek Nominal Görünür Güç (VA)	5000	6500	8000	10000
Maks. Çıkış Görünür Güç (VA) ⁵	5000 (10000@60saniye)	6500 (13000@60saniye)	8000 (16000@60saniye)	10000 (16500@60saniye)
Maks. Çıkış Akımı (A)	8.5	10.8	13.5	16.5
Nominal Çıkış Voltajı (V)	400 / 380	400 / 380	400 / 380	400 / 380
Kamusal Şebekeye Maks. AC Akım Çıkışı (A)	50 / 60	50 / 60	50 / 60	50 / 60
Çıkış THDv (Doğrusal Yükle)	<3%	<3%	<3%	<3%
Verimlilik				
Maks. Verimlilik	98.0%	98.0%	98.2%	98.2%
Avrupa Verimliliği	97.2%	97.2%	97.5%	97.5%
Maks. Akü ile Yük Verimliliği	97.5%	97.5%	97.5%	97.5%
MPPT Verimliliği	99.9%	99.9%	99.9%	99.9%
Koruma				
PV İzolasyon Direnci Tespiti	Birleşik	Birleşik	Birleşik	Birleşik
Kaçak akım izleme	Birleşik	Birleşik	Birleşik	Birleşik
DC Ters Kutup Koruması	Birleşik	Birleşik	Birleşik	Birleşik
Anti Ada Koruması	Birleşik	Birleşik	Birleşik	Birleşik
AC Aşırı Akım Koruması	Birleşik	Birleşik	Birleşik	Birleşik
AC Kısa Devre Koruması	Birleşik	Birleşik	Birleşik	Birleşik
AC Aşırı Voltaj Koruması	Birleşik	Birleşik	Birleşik	Birleşik
DC Şalteri	Birleşik	Birleşik	Birleşik	Birleşik
DC Parafudr	Tip II	Tip II	Tip II	Tip II
AC Parafudr	Tip III	Tip III	Tip III	Tip III
Uzaktan Kapatma	Birleşik	Birleşik	Birleşik	Birleşik
Genel Veriler				
Çalışma Sıcaklığı Aralığı (°C)	-35 ~ +60	-35 ~ +60	-35 ~ +60	-35 ~ +60
Bağıl Nem	0 ~ 95%	0 ~ 95%	0 ~ 95%	0 ~ 95%
Maks. Çalışma Rakımı (m)	4000	4000	4000	4000
Soğutma Yöntemi	Doğal konveksiyon	Doğal konveksiyon	Doğal konveksiyon	Doğal konveksiyon
Kullanıcı Arayüzü	LED, APP	LED, APP	LED, APP	LED, APP
BMS ile İletişim ⁶	RS485, CAN	RS485, CAN	RS485, CAN	RS485, CAN
Meter ile İletişim	RS485	RS485	RS485	RS485
Portal ile İletişim	WiFi / WiFi + LAN (Opsiyonel) / 4G (Opsiyonel)			
Ağırlık (kg)	24	24	24	24
Boyutlar (G x U x D mm)	415 x 516 x 180	415 x 516 x 180	415 x 516 x 180	415 x 516 x 180
Topoloji	İzole edilmemiş	İzole edilmemiş	İzole edilmemiş	İzole edilmemiş
Gece Güç Tüketimi (W) ⁶	<15	<15	<15	<15
Giriş Koruması Derecesi	IP66	IP66	IP66	IP66
Monte Yöntemi/methodu	Duvara Monte	Duvara Monte	Duvara Monte	Duvara Monte

* 1: 1000V sistem için Maks. Giriş Voltajı (V) 950V'dür.

* 2: Yerel şebeke yönetmeliğine göre.

* 3: Sadece PV ve pil gücü yeterliyse ulaşılabilir.

* 4: Belçika için Kamusal Şebekeye Maks. Görünür Güç Çıkışı (VA): GW5KN-ET 5000'dür; GW6.5KN-ET 6500'dür; GW8KN-ET 8000'dür; GW10KN-ET 10000'dür.

* 5: CAN iletişimi varsayılan olarak yapılandırılmıştır. RS485 iletişimi kullanılıyorsa, lütfen ilgili iletişim hattını değiştirin.

* 6: Yedek Çıkış Yok.

* 7: En son sertifikalar için lütfen GoodWe web sitesini ziyaret edin.

GOODWE

ET LV Series

6-20kW | Three phase | 2/3/4 MPPTs
Hybrid inverter

The GoodWe ET LV Series inverter (6-20kW) is ideal for residential PV systems, offering seamless integration with low-voltage (48V) batteries. Designed for flexibility, it supports a wide range of battery capacities and brands, including GoodWe's own Lynx A G3, Lynx U G3, and BAT 14kWh low-voltage batteries-making it a versatile choice for homeowners seeking reliable energy storage solutions.



High Performance

- 20A per string & 200% PV oversizing
- Dual independent battery inputs with 416A



Smart Control & Monitoring

- Seamless switching < 4ms
- Generator compatibility and charge for battery



Superb Safety & Reliability

- AI-driven AFCI optional¹
- Type II SPD on both DC&AC sides
- IP66 ingress protection



Flexible & Adaptable Applications

- Unbalanced output up to 150%
- Compatible with both Lithium and lead-acid batteries

1: Optional devices or functions are purchased separately.

Technical Data	GW6K-ET-L-G10	GW8K-ET-L-G10	GW10K-ET-L-G10	GW12K-ET-L-G10	GW12K-ET-LL-G10	GW15K-ET-L-G10	GW20K-ET-L-G10
Battery Input Data							
Battery Type	Li-Ion & Lead-acid						
Nominal Battery Voltage (V)	48						
Battery voltage range (V)	40 ~ 60						
Number of Battery Input	1	1	1	1	1	2	2
Max. Continuous Charging Current (A)	135	175	220	250	250	165 / 165	208 / 208
Max. Continuous Discharging Current (A)	135	175	220	250	250	165 / 165	208 / 208
Max. Charging Power (W)	6000	8000	10000	12000	12000	15000	20000
Max. Discharging Power (W)	6600	8800	11000	13200	13200	16500	22000
PV String Input Data							
Max. Input Power (W)	12000	16000	20000	24000	24000	30000	40000
Max. Input Voltage (V)	1000						
MPPT Operating Voltage Range (V)	150 ~ 850						
Start-up Voltage (V)	180						
Nominal Input Voltage (V)	620						
Max. Input Current per MPPT (A)	20 / 20	20 / 20	20 / 20 / 20	20 / 20 / 20	20 / 20 / 20	20 / 20 / 20 / 20	20 / 20 / 20 / 20
Max. Short Circuit Current per MPPT (A)	26 / 26	26 / 26	26 / 26 / 26	26 / 26 / 26	26 / 26 / 26	26 / 26 / 26 / 26	26 / 26 / 26 / 26
Number of MPP Trackers	2	2	3	3	3	4	4
Number of Strings per MPPT	2 / 1 + 1	2 / 1 + 1	3 / 1 + 1 + 1	3 / 1 + 1 + 1	3 / 1 + 1 + 1	4 / 1 + 1 + 1 + 1	4 / 1 + 1 + 1 + 1
AC Output Data (On-grid)							
Nominal Output Power (W)	6000	8000	10000	12000	12000	15000	20000
Nominal Apparent Power Output to Utility Grid (VA)	6000	8000	10000	12000	12000	15000	20000
Max. Apparent Power Output to Utility Grid (VA)	6600	8800	11000	13200	13200	16500	22000
Max. Apparent Power from Utility Grid (VA)	31050	31050	31050	31050	26670	48300	48300
Nominal Output Voltage (V)	400 / 380, 3L / N / PE			220 / 127, 3L / N / PE		400 / 380, 3L / N / PE	
Output Voltage Range (V)	170 ~ 290						
Nominal AC Grid Frequency (Hz)	50 / 60	50 / 60	50 / 60	50 / 60	60	50 / 60	50 / 60
AC Grid Frequency Range (Hz)	45 ~ 65	45 ~ 65	45 ~ 65	45 ~ 65	55 ~ 65	45 ~ 65	45 ~ 65
Max. AC Current Output to Utility Grid @230V (A)	9.6	12.8	15.9	19.1	33.1	23.9	31.9
Max. AC Current Output to Utility Grid @220V (A)	10	13.4	16.7	20	34.6	25	33.3
Max. AC Current From Utility Grid (A)	45	45	45	45	70	70	70
Power Factor	~1 (Adjustable from 0.8 leading ~0.8 lagging)						
Max. Total Harmonic Distortion	<3%						
AC Output Data (Back-up)							
Back-up Nominal Apparent Power (VA)	6000	8000	10000	12000	12000	15000	20000
Max. Output Apparent Power without Grid (VA)	6600 (12000@10s)	8800 (16000@10s)	11000 (20000@10s)	13200 (24000@10s)	13200 (24000@10s)	16500 (30000@10s)	22000 (40000@10s)
Max. Output Apparent Power with Grid (VA)	31050	31050	31050	31050	26670	48300	48300
Max. Output Current (A)	10	13.3	16.7	20	34.6	25	33.3
Nominal Output Voltage (V)	400 / 380, 3L / N / PE			220, 3L / N / PE		400 / 380, 3L / N / PE	
Nominal Output Frequency (Hz)	50 / 60	50 / 60	50 / 60	50 / 60	60	50 / 60	50 / 60
AC Data (Generator)							
Nominal Apparent Power from AC generator (VA)	6000	8000	10000	12000	12000	15000	20000
Max. Apparent Power from AC generator (VA)	6000	8000	10000	12000	12000	15000	20000
Nominal Input Voltage (V)	400 / 380	400 / 380	400 / 380	400 / 380	220	400 / 380	400 / 380
Input Voltage Range (V)	170 ~ 290						
Nominal AC generator Frequency (Hz)	50 / 60	50 / 60	50 / 60	50 / 60	60	50 / 60	50 / 60
AC generator Frequency Range (Hz)	45 ~ 55 / 55 ~ 65	45 ~ 55 / 55 ~ 65	45 ~ 55 / 55 ~ 65	45 ~ 55 / 55 ~ 65	55 ~ 65	45 ~ 55 / 55 ~ 65	45 ~ 55 / 55 ~ 65
Max. AC Current From AC generator (A)	9.1	12.1	15.2	18.2	31.5	22.7	30.3
Nominal AC Current From AC generator (A)	9.1 / 8.7	12.1 / 11.6	15.2 / 14.5	18.2 / 17.4	31.5	22.7 / 21.7	30.3 / 29.0
Nominal Input Current (A)	9.1 / 8.7	12.1 / 11.6	15.2 / 14.5	18.2 / 17.4	31.5	22.7 / 21.7	30.3 / 29.0
Efficiency							
Max. Efficiency	97.8%						
European Efficiency	97.4%						
Max. Battery to AC Efficiency	95.5%						
MPPT Efficiency	99.9%						
Protection							
PV String Current Monitoring	Integrated						
PV Insulation Resistance Detection	Integrated						
Residual Current Monitoring	Integrated						
PV Reverse Polarity Protection	Integrated						
Battery Reverse Polarity Protection	Integrated						
Anti-islanding Protection	Integrated						
AC Overcurrent Protection	Integrated						
AC Short Circuit Protection	Integrated						
AC Overvoltage Protection	Integrated						
DC Switch	Integrated						
DC Surge Protection	Type II						
AC Surge Protection	Type II						
AFCI	Optional						
Rapid Shutdown	Optional						
Remote Shutdown	Integrated						
General Data							
Operating Temperature Range (°C)	-35 ~ +60						
Relative Humidity	0 ~ 95%						
Max. Operating Altitude (m)	4000						
Cooling Method	Smart Fan Cooling						
User Interface	LCD						
Communication with BMS	RS485 / CAN						
Communication with Meter	RS485						
Communication with Portal	WiFi / 4G						
Weight (kg)	47.5	47.5	47.5	47.5	47.5	52.0	52.0
Dimension (W x H x D mm)	754 x 549 x 262						
Noise Emission (dB)	<45						
Topology	Non-isolated						
Self-consumption at Night (W)	<15						
Ingress Protection Rating	IP66						
Mounting Method	Wall Mounted						

*: Please visit GoodWe website for the latest certificates.

*: All pictures shown are for reference only. Actual appearance may vary.

*: As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

ET Serisi

15-30kW | Üç Faz |
3 MPPT'ye kadar | Hibrid İnverter
(HV)

GoodWe ET 15-30kW Serisi invertör, büyük konut, küçük ticari ve endüstriyel uygulamalar için idealdir. Enerji depolama çözümünün vazgeçilmezi olan yüksek voltajlı invertörler, optimize edilmiş, şebekeden bağımlı/bağımsız, düşük enerji maliyeti için enerji yedekleme ve yük yönetimini kolaylaştırır. ET invertörleri, şebeke gücü talebini minimum seviyeye düşürür. Ayrıca inverterdeki kuru kontak sayesinde ısı pompaları gibi harici yükler de enerji tüketimini optimize etmek için esnek bir şekilde etkinleştirilebilir. ET Serisi, GoodWe Lynx Home F dahil olmak üzere çeşitli pil kapasiteleri ve markalarıyla uyumlu olarak çalışabilir.



Akıllı Kontrol ve İzleme

- Uzaktan veri izleme
- Çoklu protokol uyumluluğu



Kullanıcı Dostu Tasarım

- Zarif ve kompakt tasarım
- Tak ve Çalıştır özelliği



Üstün Güvenlik ve Koruma

- DC tarafında Tip II SPD
- İsteğe bağlı AFCI



Esnek & Uyumlu Çalışma

- String başına Max. 15A DC giriş akım değeri
- 150% DC güç girişi imkanı

Teknik Veriler	GW15K-ET	GW20K-ET	GW25K-ET	GW29.9K-ET	GW30K-ET
Akü Giriş Verileri					
Akü Tipi			Li-Ion		
Nominal Akü Voltajı (V)			500		
Akü Voltaj Aralığı (V)			200 ~ 800		
Maks. Şarj Akımı (A)	50	50	50 × 2	50 × 2	50 × 2
Maks. Deşarj Akımı (A)	50	50	50 × 2	50 × 2	50 × 2
Maks. Şarj Gücü (W)	15000	20000	12500 × 2	15000 × 2	15000 × 2
Maks. Deşarj Gücü (W)	15000	20000	12500 × 2	15000 × 2	15000 × 2
PV String Giriş Verileri					
Maks. Giriş Gücü (W) ¹	22500	30000	37500	45000	45000
Maks. Giriş Voltajı (V) ²			1000		
MPPT Çalışma Voltaj Aralığı (V)			200 ~ 850		
Başlangıç Voltajı (V)			200		
Nominal Giriş Voltajı (V)			620		
MPPT Başına Düşen Mak Giriş (A)			30		
MPPT Başına Maks. Kısa Devre Akımı (A)			38		
MPPT Sayısı	2	2	3	3	3
MPPT Başına String Sayısı	2 / 2	2 / 2	2 / 2 / 2	2 / 2 / 2	2 / 2 / 2
AC Çıkış Verileri (On-grid)					
Şebekeye Nominal Görünen Güç Çıkışı (VA)	15000	20000	25000	29900	30000
Şebekeye Gelen Maks. Görünen Güç Çıkışı (VA)	16500	22000	27500	29900	33000
Şebekeden Gelen Maks. Görünen Güç (VA)	22500	30000	33000	33000	33000
Nominal çıkış Gerilimi (V)			380 / 400, 3L / N / PE		
Nominal AC Şebeke Frekansı (Hz)			50 / 60		
Şebekeye Gelen Maksimum AC Akım Çıkışı (A) ⁶	25.0	33.3	41.7	49.8	50.0
Şebekeden Gelen Maksimum AC Akım Çıkışı (A)	34.0	45.0	50.0	50.0	50.0
Güç Faktörü		~ 1	(0,8 ilerleme ile 0,8 geri kalma arasında ayarlanabilir)		
Maks. Toplam Harmonik Bozulma			<3%		
AC Çıkış Verileri (Back-Up)					
Back-up Nominal Görünür Güç (VA)	15000	20000	25000	29900	30000
Max. Görünür Çıkış Gücü (VA) ³	15000 (18000@60s, 24000@3s)	20000 (24000@60s, 32000@3s)	25000 (30000@60s)	30000 (36000@60s)	30000 (36000@60s)
Maks. Çıkış Akımı (A)	22.7 (27.3@60s, 36.4@3s)	30.3 (36.4@60s, 48.5@3s)	37.9 (45.5@60s)	45.5 (54.5@60s)	45.5 (54.5@60s)
Nominal Çıkış Gerilimi (V)			380 / 400		
Nominal Çıkış Frekansı (Hz)			50 / 60		
Çıkış THDv (@Doğrusal Yük)			<3%		
Verim					
Maks. Verim			98.0%		
Avrupa Verimliliği			97.5%		
Maks. Batarya-AC Verimliliği			97.5%		
MPPT verimliliği			99.9%		
Koruma					
PV String Akımını İzleme			Dahili		
PV Yalıtım Direnci Tespiti			Dahili		
Kaçak Akım İzleme			Dahili		
PV Ters Polarite Koruması			Dahili		
Pil Ters Polarite Koruması			Dahili		
Adalanma Karşısı Koruması			Dahili		
AC Yüksek Akım Koruması			Dahili		
AC Kısa Devre Koruması			Dahili		
AC Yüksek Voltaj Koruması			Dahili		
DC Anahtar ⁴			Dahili		
DC Yüksek Gerilim Koruması			Tip II		
AC Yüksek Gerilim Koruması			Tip III		
AFCI			Opsiyonel		
Ani Kapatma			Opsiyonel		
Uzaktan Kapatma			Dahili		
Genel Veriler					
Çalışma Sıcaklığı Aralığı (°C)			-35 ~ +60		
Bağıl Nem			0 ~ 95%		
Maks. Çalışma Rakımı			4000		
Soğutma Methodu			Akıllı Fanlı Soğutma		
Kullanıcı Arayüzü			LED, WLAN + APP		
BMS ile İletişim			RS485 / CAN		
Smartmeter ile İletişim			RS485		
Portal ile İletişim			WiFi / 4G		
Ağırlık (kg)	48	48	54	54	54
Boyut (Genişlik × Yükseklik × Derinlik mm)			520 × 660 × 220		
Gürültü Emisyonu (dB)	<45	<45	<45	<60	<60
Topoloji			İzole edilmemiş		
Gece Öz Tüketimi (W) ⁵			<15		
Koruma Sınıfı			IP66		
Montaj Yöntemi			Duvara Monte		

*1: Maks. Giriş Gücü, 1.5" normal güç için sürekli değil.

*2: 1000V sistem için, maksimum çalışma voltajı 950V'tur.

*3: Yalnızca PV ve pil gücü yeterliyse ulaşılabilir.

*4: DC Anahtar: GHX6-55P (Avustralya için).

*5: Back-up Çıkışı yoktur.

*6: 400V şebeke için maksimum şebekeye AC çıkış akımı GW15K-ET için 23,9A, GW20K-ET için 31,9A, GW25K-ET için 39,9A, GW29.9K-ET için 43,3A, GW30K-ET için 47,8A'dır.

*: 400V şebeke için, nominal çıkış akımı GW15K-ET için 21,7A, GW20K-ET için 29,0A, GW25K-ET için 36,2A, GW29.9K-ET için 43,5A, GW30K-ET için 43,3A'dır.

*: Sertifikaların son halleri için lütfen Goodwe web sitesini ziyaret edin.

*: Gösterilen tüm resimler sadece referans amaçlıdır. Gerçek görünümle değişebilir.

ET Series

40/50kW | Three Phase | 3/4 MPPTs
Hybrid Inverter (HV)

GoodWe's ET Series inverters, available in 40kW and 50kW capacities, are designed for commercial and industrial PV installations. These adaptable inverters seamlessly integrate into both on-grid and off-grid applications, facilitating parallel connections in either scenario. When paired with the Static Transfer Switch (STS) Box from GoodWe, the inverter not only ensures dependable UPS-level switching to backup mode but also interacts with diesel generators to efficiently replenish batteries. Moreover, the ET Series is compatible with diverse battery capacities and brands, including the GoodWe Lynx C, offering a comprehensive energy storage solution.



Flexible & Adaptable Applications

- Supports parallel connection in both on- and off-grid modes
- Up to 150% DC input oversizing
- 4 MPPTs, Max. efficiency up to 98.1%



Smart Control & Monitoring

- 110% unbalanced output
- UPS-level switching



Superb Safety & Reliability

- Optional Type I+II SPD on DC side¹
- IP66 protection for outdoor installation safety
- AFCI optional¹



Friendly & Thoughtful Design

- Elegant and compact design
- Plug & Play installations

Technical Data		GW40K-ET-10	GW50K-ET-10
Battery Input Data			
Battery Type	Li-Ion		
Nominal Battery Voltage (V)	500		
Battery Voltage Range (V)	200 ~ 800		
Start-up Voltage (V)	200		
Number of Battery Input	1		
Max. Continuous Charging Current (A)	100		
Max. Continuous Discharging Current (A)	100		
Max. Charging Power (W)	44000	55000	
Max. Discharging Power (W)	44000	55000	
PV String Input Data			
Max. Input Power (W) ²	60000	75000	
Max. Input Voltage (V)	1000		
MPPT Operating Voltage Range (V)	165 ~ 850		
Start-up Voltage (V)	200		
Nominal Input Voltage (V)	620		
Max. Input Current per MPPT (A)	42 / 32 / 42	42 / 32 / 42 / 32	
Max. Short Circuit Current per MPPT (A)	55 / 42 / 55	55 / 42 / 55 / 42	
Number of MPP Trackers	3	4	
Number of Strings per MPPT	2		
AC Output Data (On-grid)			
Nominal Output Power (W)	40000	50000	
Nominal Apparent Power Output to Utility Grid (VA)	40000	50000	
Max. Apparent Power Output to Utility Grid (VA)	40000	50000	
Max. Apparent Power from Utility Grid (VA)	40000	50000	
Nominal Output Voltage (V)	380 / 400, 3L / N / PE		
Output Voltage Range (V) ³	176 ~ 276		
Nominal AC Grid Frequency (Hz)	50 / 60		
AC Grid Frequency Range (Hz)	45 ~ 65		
Max. AC Current Output to Utility Grid (A)	60.6	75.8	
Max. AC Current From Utility Grid (A)	60.6	75.8	
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		
AC Output Data (Back-up) ^{*1}			
Back-up Nominal Apparent Power (VA)	40000	50000	
Max. Output Apparent Power (VA)	44000 (48000 @ 60sec, 60000 @ 10sec)	55000 (60000 @ 60sec, 75000 @ 10sec)	
Max. Output Current (A)	66.7	83.3	
Nominal Output Voltage (V)	380 / 400, 3L / N / PE		
Nominal Output Frequency (Hz)	50 / 60		
Output THDv (@Linear Load)	< 3%		
Efficiency			
Max. Efficiency	98.1%		
European Efficiency	97.5%		
Max. Battery to AC Efficiency	97.7%		
MPPT Efficiency	99.0%		
Protection			
Residual Current Monitoring	Integrated		
PV Reverse Polarity Protection	Integrated		
Battery Reverse Polarity Protection	Integrated		
Anti-islanding Protection	Integrated		
AC Overcurrent Protection	Integrated		
AC Short Circuit Protection	Integrated		
AC Overvoltage Protection	Integrated		
DC Switch	Integrated		
DC Surge Protection	Type II (Type I + II Optional)		
AC Surge Protection	Type II		
AFCI	Optional		
Remote Shutdown	Integrated		
General Data			
Operating Temperature Range (°C)	-35 ~ +60		
Relative Humidity	0 ~ 95%		
Max. Operating Altitude (m)	4000		
Cooling Method	Smart Fan Cooling		
User Interface	LED, WLAN + APP		
Communication with BMS	CAN		
Communication with Meter	RS485		
Communication with Portal	LAN / 4G (Optional)		
Weight (kg)	62	65	
Dimension (W × H × D mm)	520 × 660 × 260		
Topology	Non-isolated		
Self-consumption at Night (W)	< 15		
Ingress Protection Rating	IP66		
Mounting Method	Wall Mounted		

*1. Backup function can be only realized with STS Box (Static Transfer Switch Box).

*2: In Australia, for most of the PV module, the max. Input power can achieve 2*Pn, Such as the max. input power of GW50K-ET can achieve 100000W.

*3: Output Voltage Range: phase voltage.

*: Please visit GoodWe website for the latest certificates.

SMART ENERGY CONTROLLER

SUN2000-5/6/8/10/12K-MAP0



Asymmetric Load

Three-phase asymmetric output
200% overload



Active Safety

AFCI & RSD (with optimizer)
Connector temperature detection



Future Ready

LUNA S0 or S1
Whole home backup (with SmartGuard)

SUN2000-5/6/8/10/12K-MAP0 **Technical Specification**

Technical Specification	SUN2000 -5K-MAP0	SUN2000 -6K-MAP0	SUN2000 -8K-MAP0	SUN2000 -10K-MAP0	SUN2000 -12K-MAP0
Max. efficiency	98.4%	98.6%	98.6%	98.6%	98.6%
European weighted efficiency	97.5%	97.7%	98.0%	98.1%	98.2%
Input (PV)					
Recommended max. PV power	9,000 Wp	11,000 Wp	14,600 Wp	18,000 Wp	22,000 Wp
Max. input voltage ¹	1,100 V				
Operating voltage range ²	160 ~ 1,000 V				
Startup voltage	160 V				
Rated input voltage	600 V				
Max. input current per MPPT	16 A				
Max. short-circuit current	22 A				
Number of MPP trackers	2				
Max. input per MPP tracker	1				
Input (DC Battery)					
Compatible battery	LUNA2000-5/10/15-S0 / LUNA2000-7/14/21-S1				
Operating voltage range	600 ~ 980 V				
Max. operating current	20 A				
Max. charging power	12,000 W				
Max. discharging power	5,500 W	6,600 W	8,800 W	11,000 W	12,000 W
Output (On Grid)					
Grid connection	Three-phase				
Rated output power	5,000 W	6,000 W	8,000 W	10,000 W	12,000 W
Max. apparent power	5,500 VA	6,600 VA	8,800 VA	11,000 VA	13,200 VA
Rated output voltage	220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE				
Overload capability	110%				
Rated AC grid frequency	50 Hz/60 Hz				
Max. output current	8.3 A	10.0 A	13.3 A	16.7 A	20.2 A
Adjustable power factor	0.8 leading ... 0.8 lagging				
Max. total harmonic distortion	≤ 3%				
Output (Off Grid)					
Compatible backup device	SmartGuard-63A-T0 (3 phase)				
Rated output power	5,000 W	6,000 W	8,000 W	10,000 W	12,000 W
Rated output voltage	220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE				
110% overload	Continuous				
150% overload	5 min (3-phase) / 5 min (Single-phase)			1 min (3-phase) / 5 min (Single-phase)	
200% overload	10 seconds				
Automatic switchover time	≤ 20 ms (with SmartGuard-63A-T0)				
Protection Feature					
Asymmetric load	Yes, supports 100% three-phase asymmetric load				
Input-side disconnection device	Yes				
Anti-islanding protection	Yes				
DC reverse polarity protection	Yes				
Insulation detection	Yes				
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11				
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11				
Residual current detection	Yes				
AC overcurrent protection	Yes				
AC short-circuit protection	Yes				
AC overvoltage protection	Yes				
Arc fault protection	Yes				
Connector temperature detection	Yes (PV & Battery connectors)				
Ripple receiver control	Yes				
Battery charging from grid	Yes				
General Specification					
Operating temperature range	-25°C ~ +60°C (-13°F ~ +140°F)				
Relative operating humidity	0 % ~ 100% RH				
Max. operating altitude	4,000 m				
Cooling	Natural convection				
Noise	≤ 29 dB				
Display	LED Indicators; Integrated WLAN + FusionSolar APP				
Communication	RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G/3G/2G via Smart Dongle-4G (Optional); EMMA (Optional)				
Weight (incl. mounting brackets)	21 kg				
Dimensions (incl. mounting brackets)	490 mm x 460 mm x 130 mm				
IP rating	IP66				
Nighttime power	< 5.5 W				
Optimizer Compatibility					
DC MBUS compatible optimizer	SUN2000-450W-P2, SUN2000-600W-P				
Safety	EN/IEC62109-1, EN/IEC62109-2				
Grid connection standards	IEC61727, IEC62116, MEA/PEA, G99, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549-1, VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuger, CEI 0-21:2020-12 V1, C10/C11				

*1 The max. input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter.

*2 Any DC input voltage beyond the operating voltage range may result in inverter malfunction.

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.

Version No.: 02-202406

Hibrit İnvertör



PV	PHYB-5K	PHYB-10K-3P
Maks. PV Gücü	9000W	15000W
Maks. PV Gerilimi	550V	1000V
MPPT Maks. Giriş Akımı	15A/15A	20A/30A
MPPT Kısa Devre	20A/20A	30A/40A
MPPT Gerilim Aralığı	70V-500V	160V-950V
MPPT Sayısı	2	2
MPPT Başına Dizi Sayısı	1	1+2
Şebeke Arayüz		
Nominal AC Çıkış Gücü	5000W	10000W
Maks. AC Çıkış Görünür Gücü	5500VA	1100VA
Max. AC Çıkış Gücü (PF=1)	5500W	11000W
Nominal AC Gerilimi	220V	380V/400V/415V
AC Gerilim Aralığı	150V-300V (Ayarlanabilir)	277V-520V (Ayarlanabilir)
Maks. AC Çıkış Akımı	25A	3*16.7A
Nominal Şebeke Frekansı	50Hz/60Hz	50Hz/60Hz
Şebeke Bağlantısı	Tek faz	Üç Faz
Güç Faktörü	>0.99 @Nominal Güç (0.8 kapasitif - 0.8 endüktif)	>0.99 @Nominal Güç (0.8 kapasitif - 0.8 endüktif)
Batarya Arayüz		
Uyumlu Batarya Tipi	Lityum-İyon / Kurşun Asit	Lityum-İyon / Kurşun Asit
Batarya Gerilim Aralığı	40V-60V	120V-600V
Maks. Şarj/Deşarj Gücü	5000W/5000W	15000W/10500W
Maks. Şarj/Deşarj Akımı	120A/120A	50A/50A
Yedek Arayüz		
Nominal Çıkış Gerilim	230V	380V/400V/415V
Nominal Çıkış Frekansı	50Hz/60Hz	50Hz/60Hz
Nominal Çıkış Gücü	5000W	10000W
Nominal Çıkış Akımı	21.7A	3*15.2A
Genel		
Koruma Seviyesi	IP65	IP65
Çalışma Sıcaklık Aralığı	-25°C~60°C	-25°C~45°C
Soğutma	Doğal Soğutma	Doğal Soğutma
Boyut (ExDxY)	515x485x175 mm	530x550x212 mm
Ağırlık	25Kg	32Kg
Haberleşme Arayüzü	RS485/CAN (BMS için), RS485, USB, RS485(Sayaç) Wifi Ops.	RS485/CAN (BMS için), RS485, USB, RS485(Sayaç) Wifi Ops.

LFP Batarya Hücreleri



Temel Özellikler	PLFP-100	PLFP-302	PLFP-304
Pil Tipi	LiFePO ₄ - Prizmatik		
Nominal Kapasite	100Ah	302Ah	304 Ah
Nominal Gerilim	3.2V		
Maks. Şarj Gerilimi	3.65V		
Min. Deşarj Gerilimi (≥0°C)	2.50V		
Şarj Kesme Akımı	0.05C		
Deşarj Sıcaklığı (****)	-15~50°C	-30~55°C	-30~60°C
Şarj Sıcaklığı	0~50°C	0~55°C	
Depolama Sıcaklığı	-10~60°C		
Standart Şarj/Deşarj Akımı (25°C)	0.5C/0.5C		1C / 1C
Maks. Sürekli Şarj/Deşarj Akımı	1C / 1C	0.5C / 1C	1C / 1C
Maks. Kısa Süreli (30s) Sürekli Şarj/Deşarj Akımı	2C / 2C		
ACR (25°C, 15%SOC,1KHz)	≤0.6mΩ	≤0.25mΩ	≤0.25mΩ
DCR (25°C, 50%SOC,100A/10s)	≤1.5mΩ	≤0.6mΩ	≤0.5mΩ
Kalan Kapasite Kaybı	≤4%/Ay (50%SOC, 25°C ± 2C)		
Döngü Ömrü (*)	≥6000(*)	≥6000 (**)	≥6000(***)
Mekanik Özellikler			
Nem Aralığı	0-85%RH (yoğuşmasız)		
Rakım	<4500 m		
Kutu	Prizmatik - Alüminyum		
Genişlik	173.6 ± 0.5 mm	174.7 ± 0.5 mm	174.92 ± 1.0 mm
Derinlik	48.6 ± 0.5 mm	71.65 ± 0.5 mm	71.72 ± 1.0 mm
Yükseklik (Kutuplar Hariç)	115.6 ± 0.5 mm	204.5 ± 1.0 mm	204.22 ± 1.0 mm
Yükseklik (Kutuplar Dahil)	121.5 ± 0.5 mm	207.0 ± 0.5 mm	207.01 ± 1.0 mm
Ağırlık	2.0 ± 0.1 kg	5.49 ± 0.3 kg	5.58 ± 0.2 kg

(*) Test Koşulları: 25°C, %70 SOH

(**) Test Koşulları: 25°C, %80 SOH

(***) Test Koşulları: 25°C, %70SOH

(****) Performans farklı koşullarda değişiklik gösterebilir

LFP Modüller



Temel Özellikler	PMS-1P4S100	PMS-1P8S100	PMS-1P12S100	PMS-2P4S100
Pil Tipi	LiFePO ₄ - Prizmatik			
Nominal Kapasite	100Ah	100Ah	100Ah	200Ah
Nominal Gerilim	12.8V	25.6V	38.4V	12.8V
Maks. Şarj Gerilimi	14.6V	29.2V	43.8V	14.6V
Min. Deşarj Gerilimi (>0°C)	10.0V	20.0V	30.0V	10.0V
Deşarj Sıcaklığı (**)	-15~50°C			
Şarj Sıcaklığı	0~50°C			
Depolama Sıcaklığı	-10~60°C			
Standart Şarj/Deşarj Akımı (25°C)	0.5C / 0.5C			
Maks. Sürekli Şarj/Deşarj Akımı	1C / 1C			
Maks. Kısa Süreli (30s) Sürekli Şarj/Deşarj Akımı	2C / 2C			
Pil ACR (25°C, 15%SOC,1KHz)	≤0.6mΩ			
Pil DCR (25°C, 50%SOC,100A/10s)	≤2.0mΩ			
Pil Kapasite Tutma (25°C, 100%SOC, 30gün)	≥95%			
Pil Kapasite Tutma (60°C, 100%SOC, 7gün)	≥95%			
Kalan Kapasite Kaybı	≤3%/ay (25°C ± 2C)			
Döngü Ömrü (*)	≥6000 döngü			
Mekanik Özellikler				
Nem Aralığı	0-85%RH (Yoğuşmasız)			
Rakım	<3000m			
Kutu	Prizmatik - Alüminyum			
Genişlik	175 ± 0.5 mm	175 ± 0.5 mm	175 ± 0.5 mm	175 ± 0.5 mm
Derinlik	233 ± 0.5 mm	430 ± 0.5 mm	627 ± 0.5 mm	233 ± 0.5 mm
Yükseklik (Kutuplar Dahil)	139 ± 0.5 mm	139 ± 0.5 mm	139 ± 0.5 mm	139 ± 0.5 mm
Ağırlık	10 ± 0.1 kg	18 ± 0.1 kg	26 ± 0.1 kg	18 ± 0.1 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

İstiflenebilir G Serisi Yüksek Gerilim Bataryalar



Temel Özellikler	PBG-153100	PBG-204100	PBG-256100	PBG-307100	PBG-358100	PBG-409100
Batarya Tipi	LiFePO ₄ - Prizmatik					
Nominal Gerilim	153.6V	204.8V	256V	307.2V	358.4V	409.6V
Çalışma Gerilim Aralığı	134V-170V	179V - 227V	224V - 284V	268V - 340V	313V-397V	358V-454V
Nominal Kapasite (*)	100Ah					
Nominal Enerji Kapasitesi	15.3 kWh	20.4 kWh	25.6 kWh	30.7 kWh	35.8 kWh	40.9 kWh
Maksimum Şarj Gerilimi	172V	230V	288V	345V	403V	460V
Maksimum Sürekli Şarj/Deşarj Akımı	0.5C / 0.5C					
Döngü Ömrü (*)	≥6000 döngü					
Normal Çalışma Sıcaklığı	25°C					
Şarj Sıcaklığı	0~50°C					
Deşarj Sıcaklığı (**)	-10~55°C					
Depolama Sıcaklığı	-20~55°C					
Kalan Kapasite Kaybı	Aylık ≤ 3% (25°C ± 2C)					
Garanti	10 yıl					
Paralel Bağlantı	Yok					
Fonksiyonel Özellikler						
Haberleşme	CAN, RS485					
Kapasite Artırabilme	Seri Paket Eklentileri					
Soğutma	Doğal Soğutma					
BMS Korumaları	UV, OV, OC, UT, OT, SC					
LED Göstergeler	Alarm, Run, SOC					
Devre Kesici	Var (Master BMS ünitesinde)					
Uyumlu İnvertör(***)	Deye, Victron, Senergy, Growatt, Solplanet, Hopewind					
Mekanik Özellikler						
Koruma Seviyesi	IP65					
Nem	0-85%RH (yoğuşmasız)					
Yükseklik	<3000 m					
Boyut (ExDxY)	683x455x655 mm	683x455x805 mm	683x455x955 mm	683x455x1105 mm	683x455x1255 mm	683x455x1405 mm
Ağırlık	181± 5 kg	233 ± 5.5 kg	285 ± 6 kg	337 ± 6.5 kg	389 ± 7 kg	441± 7.5 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

(***) Diğer İnvertör markaları için bizimle iletişime geçin

İstiflenebilir A Serisi Yüksek Gerilim LFP Bataryalar



Temel Özellikler	PBA-128100	PBA-192100	PBA-256100
Batarya Tipi	LiFePO ₄ - Prizmatik		
Nominal Gerilim	128V	192V	256V
Çalışma Gerilim Aralığı	112V-140V	168V - 211V	224V - 282V
Nominal Kapasite (*)	100Ah		
Nominal Enerji Kapasitesi	12.8kWh	19.2kWh	25.6kWh
Maksimum Şarj Gerilimi	144V	216V	288V
Standart Şarj/Deşarj Akımı	50A / 50A		
Maksimum Sürekli Şarj/Deşarj Akımı	50A / 50A		
Döngü Ömrü (*)	≥6000 döngü		
Normal Çalışma Sıcaklığı	25°C		
Şarj Sıcaklığı	0~50°C		
Deşarj Sıcaklığı (**)	-10~55°C		
Depolama Sıcaklığı	-20~55°C		
Kalan Kapasite Kaybı	Aylık ≤ 3% (25°C ± 2C)		
Garanti	10 yıl		
Paralel Bağlantı	Yok		
Fonksiyonel Özellikler			
Haberleşme	CAN, RS485		
Kapasite Artırabilme	Seri Paket Eklentileri		
Soğutma	Doğal Soğutma		
BMS Korumaları	UV, OV, OC, UT, OT, SC		
LED Göstergeler	Alarm, Run, SOC		
Devre Kesici	Var (Master BMS ünitesinde)		
Uyumlu İnvertör(***)	Deye, Victron, Senergy, Growatt, Solplanet, Hopewind		
Mekanik Özellikler			
Koruma Seviyesi	IP65		
Nem	0-85%RH (Yoğuşmasız)		
Rakım	<3000 m		
Boyut (ExDxY)	648x200x1215 mm	648x200x1665 mm	648x200x2115 mm
Ağırlık	137 ± 5 kg	197 ± 5.5 kg	257 ± 6 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

(***) Diğer İnvertör markaları için bizimle iletişime geçin

Düşük Gerilim Bataryalar



Temel Özellikler	PBL-51100	PBW-51100
Pil Tipi	LiFePO ₄ - Prizmatik	
Nominal Gerilim	51.2V	
Nominal Kapasite (*)	100Ah	
Nominal Enerji Kapasitesi	5.12kWh	
Çalışma Gerilim Aralığı	44V - 56.8V	
Maks. Şarj Gerilimi	56.8V	
Standart Şarj/Deşarj Akımı	50A / 50A	
Maks. Sürekli Şarj/Deşarj Akımı	100A / 100A	
Limitlenmiş Şarj Akımı	10A	
Döngü Ömrü (*)	≥6000 döngü	
Normal Çalışma Sıcaklığı	25°C	
Şarj Sıcaklığı	0~50°C	
Deşarj Sıcaklığı(**)	-10~55°C	
Depolama Sıcaklığı	-20~55°C	
Kalan Kapasite Kaybı	Aylık ≤ 3% (25°C ± 2C)	
Garanti	10 Yıl	
Fonksiyonel Özellikler		
Haberleşme	CAN, RS485	
Ölçeklenebilirlik	Maks. paralel 8 ünite	
Soğutma	Doğal Soğutma	
Entegre Isıtıcı	Yok	
BMS Korumaları	UV, OV, OC, UT, OT, SC	
LED Göstergeler	Alarm, Run, SOC	
Yüksek Akım Koruması	Harici Olarak Değiştirilebilen Sigorta	Dahili
Uyumlu İnvertör(***)	Deye, Victron, Growatt, Solis, Schneider, Senergy	
Mekanik Özellikler		
Koruma Seviyesi	IP20	IP65
Nem	5% - 85% RH (yoğuşmasız)	
Rakım	<3000 m	
Boyut (ExDxY) (konektör ve kulp olmadan)	446x532x160 mm (19 İnç - 3.5U)	445x610x185 mm
Ağırlık	48±1 kg	51±1 kg
Güç Terminali	Vidalı Terminaller	

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

(***) Diğer İnvertör markaları için bizimle iletişime geçin

Yüksek Gerilim 19" Batarya Grupları



Temel Özellikler	PBH-51100	PBH-512100	PBH-768100	PBH-768200
Pil Tipi	LiFePO ₄ - Prizmatik			
Nominal Gerilim	51.2V	512V	768V	
Nominal Kapasite	100Ah			200Ah
Nominal Enerji Kapasitesi	5.12kWh	51.2kWh	76.8kWh	153.6kWh
Çalışma Gerilim Aralığı	44V-56.8V	440V - 568V	660V - 852V	
Maks. Şarj Gerilimi	56.8V	568V	852V	
Standart Şarj/Deşarj Akımı	50A / 50A			100A / 100A
Maks. Sürekli Şarj/Deşarj Akımı	100A / 100A			200A / 200A
Limitlenmiş Şarj Akımı	10A			
Döngü Ömrü (*)	≥6000 döngü			
Normal Çalışma Sıcaklığı	25°C			
Şarj Sıcaklığı	0~50°C			
Deşarj Sıcaklığı(**)	-10~50°C			
Depolama Sıcaklığı	-20~55°C	-20~50°C		
Kalan Kapasite Kaybı	≤ 3% / aylık (25°C ± 2C)			
Garanti	10 Yıl			
Fonksiyonel Özellikler				
Haberleşme	CAN, RS485	CAN		
Ölçeklenebilirlik	Maks. 15 seri birim	Maks. 15 paralel birim		Maks. 7 paralel birim
Soğutma	Fan			
BMS Korumaları	UV, OV, OC, UT, OT, SC (PDU ile)			
LED Göstergeler	Alarm, Run, SOC			
Devre Kesici	Yok	Entegre Master BMS		
Mekanik Özellikler				
Koruma Seviyesi	IP20			
Nem	5% - 85% RH (yoğuşmasız)			
Rakım	<3000 m			
Boyut (ExDxY) (konektör ve kulp olmadan)	446x532x160 mm (19 inç - 3.5U)	629x610x2251 mm (19 inç - 50U)	1258x610x2258 mm (19 inç - 50U)	1887x610x2258 mm (19 inç - 50U)
Ağırlık	48±10 kg	540±10 kg	870±15 kg	1600±30 kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Performans farklı koşullarda değişiklik gösterebilir

HIGH-VOLTAGE RESIDENTIAL BATTERY

LITHIUM BATTERY SYSTEM: BHF-S10/S15/S20/S25/S30 G1/G2[1]

The LIVOLTEK BHF HV Battery System is ideal for new installation of residential energy storage system. With high energy density, high efficiency, modular stacking design and IP65 rating, BHF series battery is space-saving for indoor and outdoor installation. Up to 30 kWh system can fit your high energy demand.

[1]: BHF-S10-30-G1 is equipped with the old version BMS.
BHF-S10-30-G2 is equipped with the new version BMS.
Only the G2 support the parallel function.

Product Benefits

- Ⓘ IP65 supporting indoor and outdoor installation
- Ⓙ Remote fault diagnosis, upgrade and maintenance
- Ⓢ Reliable performance: high efficiency, high energy density and 90% DOD
- Ⓢ Long cycle life and safest prismatic LFP batteries
- Ⓢ Modular stacking design, easy installation, supporting floor and wall mounting

LIVOLTEK

HIGH-VOLTAGE RESIDENTIAL BATTERY

BHF-S10/S15/S20/S25/S30

BATTERY

Model	BHF-S10	BHF-S15	BHF-S20	BHF-S25	BHF-S30
Technical Properties					
Nominal Voltage	204.8V	307.2V	409.6V	512V	614.4V
Operating Voltage Range	172.8V-230.4V	259.2V-345.6V	259.2V-345.6V	432V-576V	518.4V-691.2V
Battery Module	102.4V 50Ah 5.12kWh				
Number of Modules	2	3	4	5	6
Total Energy	10.2kWh	15.4kWh	20.5kWh	25.6kWh	30.7kWh
Usable Energy	9.2kWh	13.8kWh	18.4kWh	23.0kWh	27.6kWh
Rated Capacity	50Ah				
Nominal Power	5.1kW	7.7kW	10.2kW	12.8kW	15.4kW
Max. Power	9.8kW	14.7kW	19.7kW	24.6kW	29.5kW
Rated Charge/Discharge Current	25A				
Max. Charge/Discharge Current	48A				
Cycle Life	6000 Cycles[1]				
Operating Temperature Range	Charge: 0°C to 55°C / Discharge: -20°C to 55°C				
Storage Temperature	-20°C to 55°C				
Operating Humidity	5% - 95%				
Operating Altitude	Below 4000m				
Protection Degree	IP65				
Installation Location	Wall-mounted / Ground-mounted				
Battery to Inverter Communication	CAN				
Battery to Battery/BMS	CAN				
Certificate	CE, UN38.3, IEC62619, IEC61000				
Protective Level	I				
Dimensions(W×H×D mm)	870*878.5*208.7	870*1167*208.7	870*1455*208.7	870*1167*208.7 870*778*208.7	870*1167*208.7 870*1067*208.7
Net Weight	147kg	209kg	271kg	147+209=356kg	209+209=418kg

[1]: Test conditions: 0.5C Charge/0.5C Discharge, @25°C, 90% DOD, 70% EOL.

HIGH-VOLTAGE BATTERY SYSTEM

BHF-G SERIES BATTERY SYSTEM: BHF-G15/25/30/35/40/45/50/55/60

Livoltex BHF-G series are a high-performance, scalable high-voltage battery storage module, can be directly used as backup power or combined with photovoltaics to form an optical storage system, suitable for shops, hotels, small factories and other scenarios. As an energy storage system, the BHF-G series adopt the modular and rack-mounted design which are easy to install and maintain. A single battery pack has a capacity of 5.12kWh, while a cluster supports up to 12 packs as a combination system with a capacity of 61.4kWh. Also, multiple battery clusters can be in parallel for expanding capacity and power (up to 5 in parallel for a capacity of 300 kWh). Additionally, because of its Intelligent BMS system with high-performance equalization technology and multiple protections, the system can automatically balance the current and voltage of each cell and maintain it for long cycle life.

Product Benefits

- ① Easy installation and expansion with modular design
- ② Wide operating temperature range from -20°C to 55°C
- ③ Real-time monitor and management via CAN/RS485
- ④ Long cycle life with LFP cells
- ⑤ Intelligent BMS multiple protection
- ⑥ Reliable performance: high efficiency and 90% DOD



HIGH-VOLTAGE BATTERY SYSTEM

BATTERY

BHF-G SERIES BATTERY SYSTEM: BHF-G15/20/25/30/35/40/45/50/55/60

Model	BHF-G15	BHF-G20	BHF-G25	BHF-G30	BHF-G35	BHF-G40	BHF-G45	BHF-G50	BHF-G55	BHF-G60
Nominal Voltage (V)	153.6	204.8	256	307.2	358.4	409.6	460.8	512	563.2	614.4
Operating Voltage Range (V)	129.6~172.8	172.8~230.4	216~288	259.2~345.6	302.4~403.2	345.6~460.8	388.8~518.4	432~576	475.2~633.6	518.4~691.2
Rate Capacity (Ah)	100									
Number of modules	3	4	5	6	7	8	9	10	11	12
Total Energy (kWh)	15.4	20.5	25.6	30.7	35.8	41	46.1	51.2	56.3	61.4
Usable Energy (kWh)	13.8	18.4	23	27.6	32.3	36.9	41.5	46.1	50.7	55.3
Rated Power (kW)	7.7	10.2	12.8	15.4	17.9	20.5	23	25.6	28.2	30.7
Max power (kW)	15.4	20.5	25.6	30.7	35.8	41	46.1	51.2	56.3	61.4
Rated Charge/ Discharge Current(A)	50/50									
Max charge/ Discharge Current (A)	80/100									
Depth of Discharge	0.9									
Operating Temperature (°C)	Charge: 0°C to 55°C Discharge: -20°C to 55°C									
Operating Humidity	5%~95%									
Operating Altitude	< 4000m									
Communication	CAN/RS485									
Cooling Type	Natural									
Protection Rating	IP20									
Cycle Life	4000/6000 Cycles[1]									
Dimensions (mm)	545*480*2000 mm									
Weight (kg)	149	193.5	238	282.5	327	371.5	416	460.5	505	549.5

[1]. Test conditions: 0.5C Charge/0.5C Discharge, @25°C, 90% DOD, 70% EOL

LOW-VOLTAGE RESIDENTIAL BATTERY

IP21 LITHIUM BATTERY:
BLF-B51100 - 5.12KWH BLF-B51150 - 7.68KWH

The BLF-B51100 Lithium battery system is ideal for new installation of household energy storage. With high energy density and wall-mounted solution, BLF-B51100 battery system is space-saving for indoor installation. To serve increasing load requirement, the flexible expansion can fit your energy demand of today and tomorrow.

Product Benefits

- ✔ Intelligent BMS with multiple protections
- ✔ IP21 supporting indoor installation
- ✔ Reliable performance: high efficiency and 90% DOD
- ✔ Double and robust mechanical protection
- ✔ Long cycle life and safest prismatic LFP batteries
- ✔ Easy and quick installation and expansion with modular design, up to 5 units in parallel



LOW-VOLTAGE RESIDENTIAL BATTERY

BATTERY

BLF-B51100 - 5.12KWH BLF-B51150 - 7.68KWH

Model	BLF-B51100	BLF-B51150
Cell Type	LFP	
Nominal Voltage	51.2V	
Operating Voltage Range	43.2V - 57.6V	
Nominal Capacity	100Ah	150Ah
Nominal Energy	5.12kWh	7.68kWh
Max. Power	Charge: 4.1kw; Discharge: 5.12kw	Charge: 5.12kW; Discharge: 5.12kW
Depth of Discharge	100%, recommending 90%	100%, recommending 90%
Usable Energy	5.12kWh	7.68kWh
Dimension(W*H*D)	335*622*135.5 mm	585*364*165.5 mm
Weight	42.6kg	63kg
Max. Charge/Discharge Current	100A / 100A	
Operating Temperature	Charge: 0 °C - 50°C; Discharge: -10°C - 55°C	
Operating Humidity	5% - 95%	
Storage Temperature	-20°C to +60 °C	
Operating Attitude	< 4000m	
Communication	RS485 / CAN	
Scalability	Up to 5 Modules / 25kWh	Up to 5 Modules / 38.4kWh
Cooling Type	Natural	
Ingress Protection	IP21	
Installation Location	Wall - mounted	
Cycle Life	6000 Cycles[1]	
Authentication Level	IEC61000/UN38.3	

[1]: Test conditions: 0.5C Charge/0.5C Discharge, @25°C, 90% DOD, 70% EOL.

LOW-VOLTAGE RESIDENTIAL BATTERY

BLF SERIES BATTERY: BLF-12100/12200/12280/24100

BLF series Li-ion Battery is a reliable and cost-effective energy storage solution. With its high-quality materials and advanced manufacturing process, BLF series offers high energy density, long cycle life, and excellent performance, and it also guarantees safety, efficiency, and environmental friendliness.

Safe & Flexible to Use

- Operating within a widely temperature range of -20 to 55 degrees.
- Deep cycles, automatically cut off power when reaching the cut-off voltage.

Long-lasting Endurance

- Supports up to 6000 charge-discharge cycles.
- Supports 4-series boosting to form a 51.2V system.

User Friendly

- Compatible with all off-grid inverters and hybrid inverters on the market (requiring such inverters to support the lithium battery working mode).
- Low price: with costs essentially on par with those of lead-acid batteries of the same level
- Lightweight - 1/3 the weight of lead-acid batteries of the same capacity

Modular Expansion

- Maximum support for 4-series and 4-parallel expansion, reaching a
- total capacity of 40kWh



LOW-VOLTAGE RESIDENTIAL BATTERY

BATTERY

BLF SERIES BATTERY:BLF-12100/12200/12280/24100

Model	BLF-12100	BLF-12200	BLF-12280	BLF-24100
Cell Type	LFP			
Nominal Voltage(V)	12.8	12.8	12.8	25.6
Operating Voltage Range(V)	10.0 - 14.4	10 - 14.4	10 - 14.4	20.0 - 28.8
Rate Capacity(Ah)	100	200	280	100
Total Energy(kWh)	1.28	2.56	3.584	2.6
Rated Charge Discharge Current(A)	50 / 50	50 / 100	100 / 100	50 / 50
Max Charge Discharge Current(A)	100 / 100	100 / 200	140 / 200	100 / 100
Depth of Discharge	100%			
Operating Temperature (°C)	Charge: 0°C - 55°C			
Operating Humidity	5% - 95%			
Operating Altitude	< 4000m			
Cooling Type	Natural			
Protection Rating	IP65			
Terminal	M8 * 16			
Cycle Life	6000 Cycles ¹			
Dimensions(W*H*D mm)	333*223.7*175.5	521.5*220.8*238	521.5*220.8*238	521.5*220.8*238
Weight(kg)	10	20	24	20

[1]: Test conditions: 0.5C Charge/0.5C Discharge, @25°C, 90% DOD, 70% EOL.

LIVOLTEK

LOW-VOLTAGE RESIDENTIAL BATTERY

HOMCELLAR 10KWH/15KWH

Livolttek HomCellar series batteries are made for home solar systems, perfect for families with high power needs. With their large capacity, they store more solar energy, giving your home reliable backup power and cutting down on electricity bills by reducing reliance on the grid. These batteries also come with a smart Battery Management System (BMS) for top-notch safety and dependable performance. Choose Livolttek HomCellar to enjoy a greener, more cost-effective energy solution with peace of mind.



Efficient and Durable

- Over 6,000 cycles with Iron Phosphate-lithium power battery
- High capacity in a compact design for homes and businesses



Smart and Flexible

- Real-time monitoring via app and LCD.
- Easy to move and space-efficient.



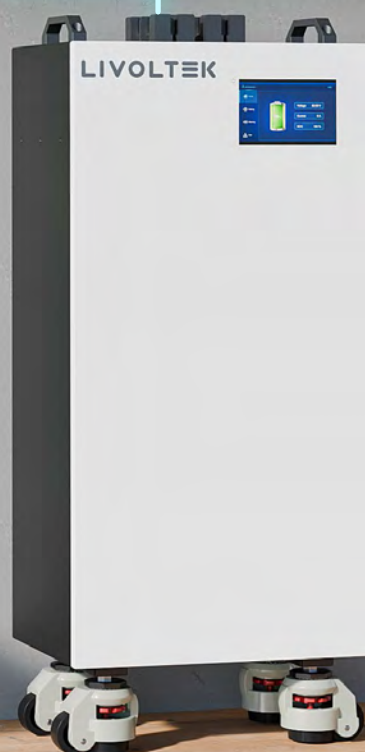
Versatile Applications

- Perfect for homes, small businesses, backup power, and off-grid use
- Expandable with up to 12 units in parallel



Reliable Safety

- 200A max charge/discharge for fast response and overload protection
- Built-in BMS ensures safety and low maintenance



LOW-VOLTAGE RESIDENTIAL BATTERY

BATTERY

HOMCELLAR 10KWH/15KWH

Model	HC-10-B1	HC-15-B1
Total Capacity	10.0 kWh	15.0 kWh
Nominal Range	40.5 - 54V	
Nominal Charge/Discharge Current	100A / 100A	157A / 157A
Max. charge Current@25°C	200A	157A
Nominal Output Power	5000W	8000W
Max. Output Power	10000W	8000W
Operating Temperature	Charge: 0°C to +55°C Discharge: -20°C to +60°C	Charge: 0°C to 55°C Discharge: -20°C to +60°C
Depth of Discharge	≥95%	
Operating Humidity	5% - 95%(RH) No Condensation	
Communication	CAN & RS485	
Scalability	12	
Ingress Protection	IP21	
Dimension(W*H*D)	364*723*240 mm ^[1]	366*874*240 mm ^[1]
Weight	70kg	100kg

*[1]: The dimensions refer to the product with wheels included.

* More technical characteristics are available on demand and customized.

Fox ESS EP11

FOX ESS'TEN YÜKSEK VOLTAJLI BATARYALAR



EP11, yüksek performanslı ve ölçeklenebilir bir batarya depolama sistemidir. Maksimum esnekliği sayesinde çeşitli depolama sistemleri için uygundur.

Ekstra bataryalar seri olarak bağlanabilir. Bu da maksimum 41.6 kWh enerjinin depolanmasına olanak tanır.

- 41.6 kWh'ye Kadar Kapasite
- %90'a Kadar Deşarj
- Standa veya Duvara Montaj
- Kompakt & Kolay Kurulum
- IP65 Koruma Sınıfı
- Yüksek Voltaj ve Yüksek Verim



Yüksek
Voltaj



Kolay
Kurulum



Yüksek
Verim



Geniştirilebilir
Sistem



90%
DoD

Fox ESS EP11

YÜKSEK VOLTAJLI DEPOLAMA BATARYALARI

SİSTEM ADI	EP11
ELEKTRİKSEL ÖZELLİKLER	
Uyumlu Cihazlar	HI, KH, H3, H3-Pro Tüm Seriler
Batarya Tipi	LifePO4 Prizmatik Hücre
Nominal Enerji [kWh]	10.36
Nominal Voltaj [V]	384
Çalışma Voltajı [V]	348 ~ 438
Maks.Şarj/Deşarj Akımı [A]*1	27
Önerilen Şarj Akımı [A]	13.5
Tepe Deşarj Akımı [A]	65 @60s
Tepe Şarj Akımı [A]	32.4 @5s
Batarya Grubu Şarj-Deşarj Verimi [%]	≥95
Deşarj Derinliği [%]	90
Döngü Ömrü	≥4000
Haberleşme	CAN
Ekran	LED*5
Ölçeklenebilirlik	Maks. 4 Ünite Paralel Bağlanabilir
ÇALIŞMA KOŞULLARI	
Kurulum Yeri	Dış Ortam/ İç Ortam
Çalışma Sıcaklığı [°C]	Şarj: 0 ~ 55 Deşarj: -10 ~ 55
Depolama Sıcaklığı [°C]	0~35
Soğutma Metodu	Doğal Konveksiyon
Nem [%]	5 ~ 95 (Yoğuşmasız)
Rakım [m]	Maks. 2,000
MEKANİK ÖZELLİKLER	
Boyutlar (W*H*D) [mm]	710*625*147
Ağırlık [kg]	99±2
SERTİFİKALAR	
Güvenlik	IEC62619
Elektromanyetik Uyumluluk (EMC)	EN IEC 61000-6-1/3
Nakliye	UN38.3
Koruma Sınıfı	IP65

*1, Akım, yüksek sıcaklıktan, hücre voltajından ve SOC'den etkilenir.

Smart String Energy Storage System



More Usable Energy

100% Depth of Discharge
Pack Level Energy Optimization



Flexible Investment

5kWh Modular Design,
Scalable from 5 to 30 kWh



Safe & Reliable

Lithium Iron Phosphate (LFP) Cell



Easy Installation

12 kg Power Module
50 kg Battery Module



Quick Commissioning

Automatically Detected in App

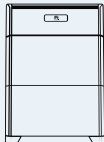
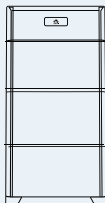


Perfect Compatibility

Compatible to Both Residential
Single & Three Phase Inverter

LUNA2000-5/10/15-S0

Technical Specification

Technical Specification	LUNA2000-5-S0	LUNA2000-10-S0	LUNA2000-15-S0
			

Performance			
Power module	LUNA2000-5KW-C0		
Number of power modules	1		
Battery module	LUNA2000-5-E0		
Battery module energy	5 kWh		
Number of battery Modules	1	2	3
Battery usable energy ¹	5 kWh	10 kWh	15 kWh
Max. output power	2.5 kW	5 kW	5 kW
Peak output power	3.5 kW, 10 s	7 kW, 10 s	7 kW, 10 s
Nominal voltage (single phase system)	360 V		
Operating voltage range (single phase system)	350 – 560 V		
Nominal voltage (three phase system)	600 V		
Operating voltage range (three phase system)	600 – 980 V		

Communication	
Display	SOC status indicator, LED indicator
Communication	RS485 / CAN (only for parallel operation)

General Specification			
Dimension (W*D*H)	670 * 150 * 600 mm (26.4 * 5.9 * 23.6 inch)	670 * 150 * 960 mm (26.4 * 5.9 * 37.8 inch)	670 * 150 * 1320 mm (26.4 * 5.9 * 60.0 inch)
Weight (Floor stand toolkit included)	63.8 kg (140.7 lb)	113.8 kg (250.9 lb)	163.8 kg (361.1 lb)
Power module dimension (W*D*H)	670 * 150 * 240 mm (26.4 * 5.9 * 9.4 inch)		
Power module weight	12 kg (26.5 lb)		
Battery module dimension (W*D*H)	670 * 150 * 360 mm (26.4 * 5.9 * 14.0 inch)		
Battery module weight	50 kg (110.2 lb)		
Installation	Floor stand (standard), Wall mount (optional)		
Operating temperature	-10°C ~ + 55°C (14°F ~ 131°F) ²		
Operating altitude	0 - 4,000 m (13,123 ft.) (Derating above 2,000 m)		
Relative humidity	5% ~ 95%		
Cooling	Natural convection		
Protection rating	IP 66		
Noise emission	<29 dB		
Cell technology	Lithium-iron phosphate (LiFePO4)		
Warranty	10 years ³		
Scalability	Max. 2 systems in parallel operation		
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/4/5/6/8/10KTL-M0 ⁴ , SUN2000-3/4/5/6/8/10KTL-M1		

Standard Compliance (more available upon request)	
Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3

Ordering and Deliverable Part	
Product ordering model ⁵	LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket

1. Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C

2. Charge/discharge derating occurs when the operating temperature from -10°C to 5 °C & 45 °C to 55 °C.

3. Refer to battery warranty letter for conditional application.

4. Available in Q1, 2021

5. Storage system is ordered and delivered in the form of power module and battery module separately with corresponding quantity.

SMART STRING ENERGY STORAGE SYSTEM

Model: LUNA2000-7/14/21-S1



Flexible Capacity

6.9 kWh per Battery Module
Scalable from 6.9 kWh to 20.7 kWh per Group
Max. 4 Groups with 82.8 kWh for an Inverter⁸



More Usable Energy

Module+ Architecture, Built-in Energy Optimizer
Ultra-long Service Time
100% Depth of Discharge



5-layer Safety Protection

Cell-level, Electrical-level, Structural-level
Active Protection, Emergency Protection



Ultimate Use Experience

-20°C to +55°C Operating Temperature
Max 10.5 kW Charging & Discharging Power per Group
Super Quiet Operation



Easy Installation

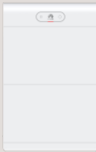
Cable Free Connection Between Modules
Horizontal Adjustment Design
Quick Commissioning



Aesthetically Pleasing Design

Breathing Star Ring Display
Silky Curve Design
Simplistic and Borderless

LUNA2000-7/14/21-S1 Technical Specification

	LUNA2000-7-S1	LUNA2000-14-S1	LUNA2000-21-S1
Technical Specification			

Performance			
Power module	LUNA2000-10KW-C1		
Number of power modules	1		
Battery module	LUNA2000-7-E1		
Battery module capacity	6.9 kWh		
Number of battery modules	1	2	3
Battery usable energy ¹	6.9 kWh	13.8 kWh	20.7 kWh
Max. charging & discharging power	3.5 kW	7 kW	10.5 kW
Operating voltage range (single-phase system)	350–560 V		
Operating voltage range (three phase system)	600–980 V		
Communication			
Display	SOC status indicator, LED indicator		
Communication ²	RS485/FE/CAN		
General Specification			
Dimensions (W x D x H)	590 mm x 255 mm x 510 mm	590 mm x 255 mm x 870 mm	590 mm x 255 mm x 1230 mm
Weight (Floor stand toolkit included)	80 kg	148 kg	216 kg
Power module dimensions (W x D x H)	590 mm x 255 mm x 150 mm		
Power module weight	10 kg		
Battery module dimensions (W x D x H)	590 mm x 255 mm x 360 mm		
Battery module weight ³	68 kg (110.2 lb) ²		
Installation	Floor stand (standard), Wall mount (optional)		
Operating temperature ⁴	–20°C to +55°C (–4°F to +131°F)		
Max. operating altitude ⁵	4,000 m (13,123 ft.) (Derated above 2,000 m)		
Environment ⁶	Outdoor / Indoor		
Relative humidity	5%–95%		
Cooling	Natural convection		
IP rating	IP 66		
Noise emission	< 29 dB ⁷		
Cell technology	Lithium-iron phosphate (LiFePO ₄)		
Scalability ⁸	Max.4 systems in parallel operation		
Compatible inverters ⁹	SUN2000-12/15/17/20/-25K-MB0, SUN2000-3/4/5/6/8/10KTL-M1 SUN2000-5/6/8/10/12K-MAP0, SUN2000-8/10K-LC0, SUN2000-2/3/3.68/4/4.6/5/6KTL-L1 SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0		
Standards Compliance (More Available Upon Request)			
Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3, ISO13849, REACH, RoHS		
Ordering and Deliverable Part			
Available for ordering ¹⁰	LUNA2000-7-E1, LUNA2000-10KW-C1, Wall Mounting Bracket for LUNA2000-7/14/21-S1		

^{*1} Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C, at the beginning of service life.

^{*2} CAN is for communication between ESSs in parallel scenarios only. The launch time of the FE communication version is to be determined. Please confirm with your local product manager of Huawei for information about the final version.

^{*3} The weight of the battery modules varies with products, with a tolerance of ±3%.

^{*4} The output power may be affected by temperature. Please refer to the output derating curve for details.

^{*5} The output power may be affected by altitude. Please refer to the output derating curve for details.

^{*6} Outdoor installation is recommended. For indoor installation instructions, please refer to the user manual.

^{*7} The data is from Huawei lab, and the test condition is 1m distance and typical working voltage.

^{*8} Only SUN2000-12/15/17/20/25K-MB0 supports 4 energy storage systems in parallel operation.

^{*9} For details on the timetable of compatibility with SUN2000-8/10K-LC0 and SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, please confirm with your local product manager of Huawei for final version.

^{*10} The power module and battery modules of the storage system are separately ordered in the required quantity.

Disclaimer: The preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.

FLEX

Batarya Ürün Teknik Özellikleri



LG'den Güvenilir Kullanım için Güvenli Ev Bataryası

Daha fazla bilgi için lghomebatteryblog.eu adresini ziyaret edin

LG Energy Solution ESS Europe'u buradan takip edebilirsiniz >   

ÜRÜN ÖZELLİKLERİ

ELEKTRİK VERİLERİ

Model İsmi	FLEX 8.6	FLEX 12.9	FLEX 17.2
Batarya Modül Sayısı	2	3	4
Kullanılabilir Enerji ¹ (DoD100%) [kWh]	8.6	12.9	17.2
Gerilim Aralığı [V]	192~265.6	288~398.4	384~531.2
Max. Şarj/Deşarj Akımı [A]	22	22	22
Max. Şarj/Deşarj Gücü [kW]	4.3	6.5	8.5
Pik Güç (sadece deşarj, 3 saniye için.) ²	5	7	11
Haberleşme arayüzü	RS485 & CAN		
Maximum Koruma Gerilimi [V]	1.000		
DC Koruma	Devre Kesici		
Faz	Single (Tek) & 3-phase (Üç Faz)		
Bağlantı Metodu	Güç: Vidalı kelepçe bağlantı Haberleşme: Yaylı tip bağlantı		
Kullanıcı arayüzü	Normal ve hata çalışma için LED		
Güvenlik özellikleri	Aşırı Gerilim / Aşırı Akım / kısa devre		

ÇALIŞMA KOŞULLARI

Montaj Yeri	İç Mekan / Dış Mekan	
Montaj Tipi	Zemine & Duvara Montaj	
Çalışma Sıcaklığı[°C]	Şarj	-10 ~ 50
	Deşarj	-10 ~ 50
Çalışma Sıcaklığı[°C] (Tavsiye edilen)	20 ~ 30	
Depolama Sıcaklığı (Nakliye halinde)	-30 ila 60°C, toplamda 7 gün için kabul edilebilir -20 ila 45°C, ilk 6 ay için kabul edilebilir -20 ila 30°C, 7. ay ~ 12. ay için kabul edilebilir	
Nem oranı	5%~95%	
Rakım	Maks. 2000m	
Soğutma Yöntemi	Doğal Konveksiyonlu	

- Test Koşulları - Sıcaklık 25°C, kullanım ömrü başlangıcında
- Kullanılabilir Enerji, LGES tarafınca (0,3CCCV/0,3CC) belirli koşullar altında ölçülür
- Ürün özellikleri önceden haber verilmeksizin değiştirilebilir / ¹⁾ BMA = Battery Module Assembly ²⁾ BPU = Battery Protection Unit

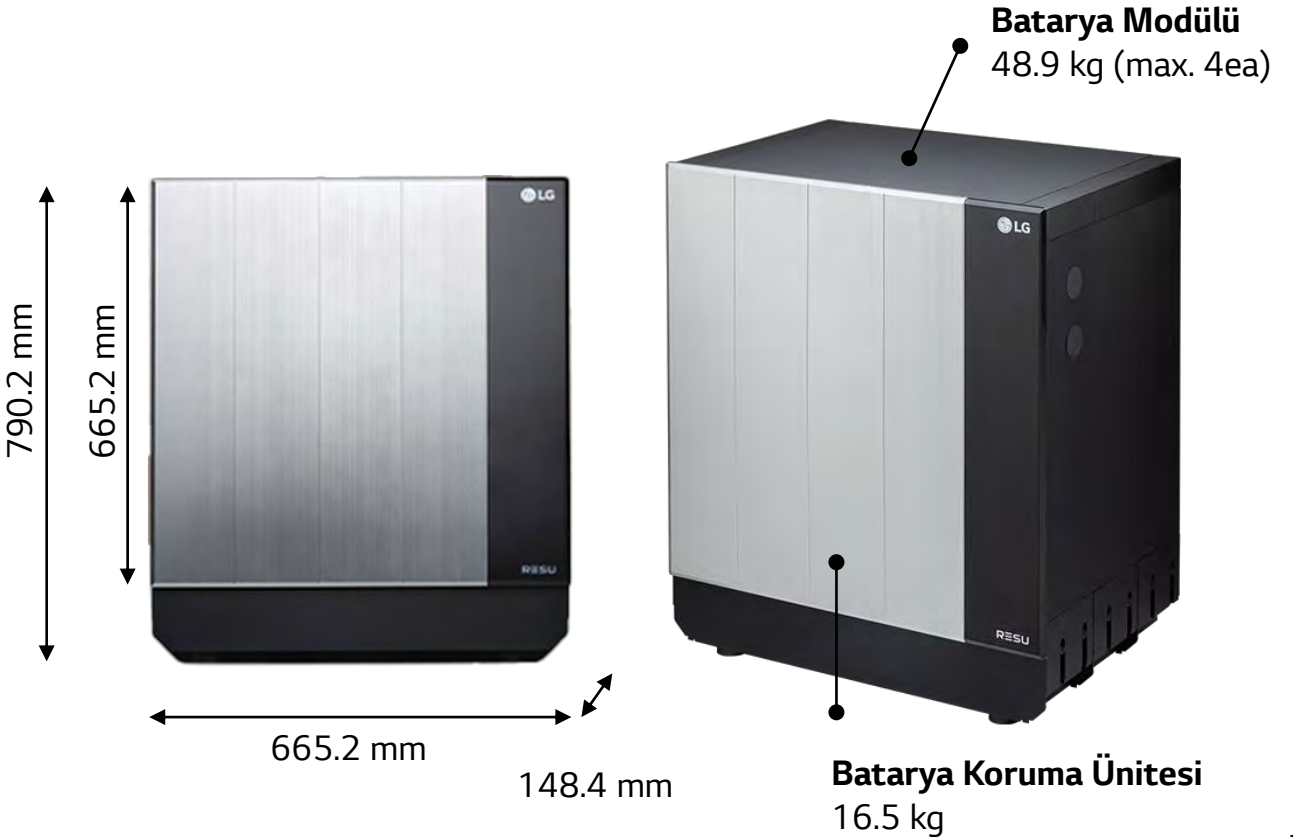
SERTİFİKASYON VE GÜVENİLİRLİK

Güvenlik	Hücre	UL1642, IEC62619
	Batarya Takımı	CE, RCM, UL1973, IEC62619, IEC62477-1, UL9540A, FCC, IEC61000-6-1/-2/-3
EMC		FCC, IEC61000-6-1/-2/-3
Nakliye		UN38.3 (UNDOT)
Tehlikeli Madde Sınıflandırması		Class 9
İp koruma sınıfı		IP55

MEKANİK ÖZELLİKLER - STANT TIPI

Ölçüler	Genişlik	665.2 mm
	Yükseklik	665.2 mm
	Sabitlenme Braketle Yükseklik	790.2 mm
	Derinlik	148.4 mm
Ağırlık *	BMA1): 48.9 kg, BPU2): 16.5 kg	

- * Tasarım Kapak ve Braketler Olmadan
- ** BPU'nun Ağırlığı (Tasarım Kapaklı) : 16,6 kg
- ¹⁾ BMA = Battery Module Assembly ²⁾ BPU = Battery Protection Unit



MEKANİK ÖZELLİKLER - DUVARA MONTAJ TÜRÜ

Ölçüler	Genişlik	665.2 mm
	Yükseklik	665.2 mm
	Derinlik	148.4 mm
Ağırlık *	BMA1): 48.9 kg, BPU2): 16.5 kg	

- * Tasarım Kapak ve Braketler Olmadan
- ** BPU'nun Ağırlığı (Tasarım Kapaklı) : 16,6 kg
- ¹⁾ BMA = Battery Module Assembly ²⁾ BPU = Battery Protection Unit

Batarya Modülü
48.9 kg (max. 4ea)

Batarya Koruma Ünitesi
16.5 kg



GOODWE

Lynx Ev F Serisi

6,6-16,4kWh | Yüksek voltajlı pil

GoodWe yüksek voltajlı pil Lynx Home F Serisi, GoodWe tek duraklı enerji depolama çözümünün mükemmel bir eşleşmesi ve öne çıkan özelliğidir. GoodWe BH/EH/BT/ET inverterlerle uyumludur ve 6,6kWh ile 16,4kWh arasında geniş bir kapasite aralığı sunarak öz tüketim optimizasyonundan yedekleme kullanımına kadar zorlu proje gereksinimlerini karşılamak için kapsamlı enerji depolama seçenekleri sunar. İstiflenebilir kendi kendini algılayan modüller, sistemin kurulumunu ve bakımını özellikle kolaylaştırır. Bu arada, güvenilir lityum demir fosfat (LFP) pil hücresi teknolojisi, maksimum güvenlik ve daha uzun bir yaşam döngüsü sağlar. Hayatınız için güçlü güç depolaması için Lynx Home F Serisi ile hazırlanın.



Akıllı Kontrol

- Uzaktan teşhis ve güncelleme
- Düşük voltajdan sonra otomatik yeniden başlatma



Üstün Güvenlik ve Güvenilirlik

- Yüksek çevrim kararlılığına sahip güvenilir LFP teknolojisi
- Dış mekan kurulum güvenliği için IP55 koruması



Dost Canlısı ve Düşünceli Tasarım

- İstiflenebilir otomatik tanıma modülleri
- Tak ve Çalıştır kablolama



Esnek ve Uyarlanabilir Uygulamalar

- 6,6 – 16,5kWh geniş kapasite aralığı
- GoodWe BH/EH/BT/ET inverterleri ile uyumlu

Teknik Veriler	LX F6.6-H	LX F9.8-H	LX F13.1-H	LX F16.4-H
Kullanılabilir Enerji (kWh) ^{*1}	6.55	9.83	13.1	16.38
Akü Modülü	LX F3.3-H; 102.4V 3.27kWh			
Modül Sayısı	2	3	4	5
Hücre Tipi	LFP (LiFePO4)			
Nominal Voltaj (V)	204.8	307.2	409.6	512
Çalışma Voltaj Aralığı (V)	182.4 ~ 230.4	273.6 ~ 345.6	364.8 ~ 460.8	456 ~ 576
Nominal Deşarj / Şarj Akımı (A) ^{*2}	25	25	25	25
Nominal Güç (kW) ^{*2}	5.12	7.68	10.24	12.8
Çalışma Sıcaklığı Aralığı (°C)	Şarj: 0 ~ +50 / Deşarj: -20 ~ +50			
Bağıl Nem	0 ~ 95%	0 ~ 95%	0 ~ 95%	0 ~ 95%
Maks. Çalışma Rakımı (m)	2000	2000	2000	2000
İletişim	CAN	CAN	CAN	CAN
Ağırlık (kg)	115	158	201	244
Boyutlar (G x U x D mm)	600 x 625 x 380	600 x 780 x 380	600 x 935 x 380	600 x 1090 x 380
Giriş Koruması Derecesi	IP55	IP55	IP55	IP55
Takma Yöntemi	Topraklı	Topraklı	Topraklı	Topraklı
Standart ve Sertifikasyon	Güvenlik	IEC62619, IEC62040, CEC		
	EMC	CE, RCM		
	Nakliye	UN38.3		

*1: Test koşulları, %100 Deşarj Derinliği (DOD), başlangıç ömründeki akü sistemi için +25 ±2°C'de 0,2C şarj ve deşarj. Sistemin Kullanılabilir Enerjisi invertere göre değişebilir.

*2: Sıcaklık ve Şarj Durumuna (SOC) bağlı olarak Nominal Deşarj / Şarj Akımı ve güç azalması oluşacaktır.

*3: 25 ±2°C'de ömrünün %80'ini doldurmuş Hücrenin 1C / 1C test koşulu altında 2,5~3,65V voltaj aralığına dayalı olarak.

*: Son çıkan sertifikalar için lütfen GoodWe web sayfasını ziyaret ediniz.

Flexible battery system for C&I energy storage

- ✓ Lower electricity cost
- ✓ Reduced peak demand
- ✓ Uninterrupted power supply
- ✓ Safe and efficient operation

Combined with GoodWe ET 15-30kW hybrid inverters, the Lynx 60 kWh battery system offers an expandable and easy-to-install storage solution for C&I applications. The combined solution enables parallel connection of multiple ET inverters and up to three Lynx C 60kWh per inverter. Energy back-up, peak-shaving and load management functions are intelligently handled by the inverter. With effective temperature management to enable outdoor operation across different climate zones, the storage solution is a great fit for small and medium C&I scenarios, including industrial parks, agricultural and commercial complexes.

-  Compatible with GoodWe hybrid inverters ET 15-30kW
-  Paralleling options for extended power and battery capacity
-  Outdoor battery cabinet with compartment for GoodWe inverter



Technical Data		GW60KWH-D-10	GW60KWH-D-10 (Extension)
			
Battery Data			
Usable Energy (kWh) ^{*1}	60		
Cell Type	LFP (LiFePO4)		
Pack Nominal Energy (kWh)	5.76		
Number of Packs	11		
Nominal Voltage (V)	633.6		
Operating Voltage Range (V)	554.4 ~ 712.8		
Max. Charge / Discharge Current (A) ^{*2}	96		
Cycle Life ^{*3}	≥5000		
Depth of Discharge	100%		
Efficiency			
Round-trip Efficiency	95%		
General Data			
Operating Temperature Range (°C)	Charge: 0 ~ +55; Discharge: -25 ~ +55		
Storage Temperature (°C)	0 ~ +35 (<One Year); -20 ~ 0 (≤One Month); +35 ~ +45 (≤One Month)		
Relative Humidity	0~95%		
Max. Operating Altitude (m)	3000		
Heating & Cooling	Air Conditioner		
Communication Interface	CAN		
Weight (kg)	appro.1029.5	appro.972	
Dimension (W x H x D mm)	1108 x 2050 x 1111.5	808 x 2050 x 1111.5	
Ingress Protection Rating	IP55 (Battery cabinet)	IP55	
Anti-Corrosion ^{*4}	C4 (Optional upgrade to C5)		
Fire Suppression	Package level aerosol, Cluster level perfluorohexane		

*1: Test conditions, 100% DOD, 0.5C charge & discharge at +25 ±2 °C for battery system at beginning life. System Usable Energy may vary with different Inverter.

*2: Actual Dis- / Charge Current and power derating will occur related to Cell Temperature and SOC.

*3: Based on Cell test condition of 25 ±2°C, 0.5C / 0.5C and 80% EOL.

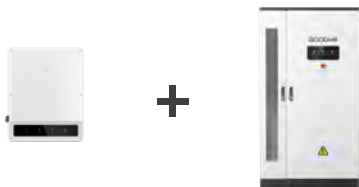
*4: Excluding locks.

*: Please visit GoodWe website for the latest certificates.

*: All pictures shown are for reference only. Actual appearance may vary.

C&I Energy Storage Solution

The Lynx C 60kWh battery system is paired with a hybrid inverter from the GoodWe ET 15-30kW series to form a compact storage solution.



A convenient compartment for the hybrid inverter is included. The hybrid inverter of the ET15-30kW series must be purchased separately. Refer to the ET 15-30kW datasheet for detailed inverter specs.

Extension of the Energy Storage Solution

The combined energy storage system can be expanded by connecting up to two additional Lynx C 60kWh extension batteries (model GW60KWH-D-10-Extension), resulting in 180kWh battery capacity.



Parallel connection of the hybrid inverter will enable further system expansions.



KAC50DP-BC100DM

50kW/100kWh outdoor All-in-one ESS cabinet

Highlights:

Safe&Reliable

- CATL LFP battery cell
- Double fire suppression system design
- 1+1 redundancy design

Simple&User-friendly

- Pre-installed in factory for easy installation on site
- Integrated BMS/EMS, suitable for various applications
- Effortless operation, could control

Economical&Efficient

- 100% DOD, improving ROI
- Save Capex, expanding as required
- Efficient and energy-saving HVAC design

Outdoor battery cabinet parameters

Technical parameters

Battery tyoe	LFP
Battery module capacity	5.12kWh
Number of modules	10*2
Total battery capacity	102.4kWh
Nominal voltage	512V
Operating voltage range	448V~576V
Charge/Discharge rate	Max. 0.5C
DoD	100%
Standards	IEC62619-2017;UN38.3;IEC61000-6-2/4

General parameters

Dimensions(WxDxH)	1100 x 1080 x2380 mm
Installation site	Outdoor
IP protection	IP54
Anti corrosion level	C4
Operation humidity	0%~95% (No condensing)
Operation temperature	-30°C~+50°C
Max. operation altitude	4000m (>3000m derating)
Communication port	Ethernet;CAN
Communication protocol	CAN;MODBUS TCP/IP
Cooling method	Air conditioner



Product specifications		KAC50DP
PV side		
Max. input voltage		1000V
MPPT voltage range		300V~800V
Max. current per MPPT		30A
Number of MPPT		3
Number of inputs per MPPT		2
Battery side		
Max. input voltage		750V
Min. input voltage		350V
DC voltage at nominal operation		500V~750V
Max. DC Current		50A*2
Number of DC inputs		2
Max. DC input power		50kW
AC side(On grid)		
Nominal AC output power		50kW
Max. AC output power		55kVA
Max. AC current		80A
Nominal AC voltage		400V
AC voltage range		320V~480V
Nominal grid frequency/frequency range		50/60Hz±5Hz
THDv		<3%(100% load)
PF at nominal power		1
Adjustable PF range		1(lagging)~1(leading)
AC side(Off grid)		
Nominal AC voltage		400V±3%
THDv		<3%(linear load)
Nominal grid frequency/frequency range		50/60Hz
Nominal AC output power		50kW
Max. AC output power		55kVA
Efficiency		
Max. efficiency		96.8%
Protection		
Reverse connection protection		Yes
DC switch		Yes
AC switch		Yes
Surge protection		DC Type II;AC Type II
Grid monitoring/ Earthing fault detection		Yes
Insulation monitoring		Yes
Over-temperature protection		Yes
General parameters		
Dimensions(WxDxH)		665*610*335mm
Weight		62KG
Topology		Transformerless
IP protection		IP65
Operation temperature range		-25~60°C(>50°C derating)
Operation humidity range(no condensing)		0~100%
Cooling method		Intelligent air cooling
Max. operation altitude		4000m(>3000m derating)
Display		LCD
Communication port		RS485/CAN
Communication protocol		Modbus RTU
Standards		IEC 62477 , IEC61000 , CE , GB/T

KSTAR

Stock code: 002518



BluePulse Series NEW

KAC120D-BC233DE

-  Safe & Reliable
-  Quick installation & User-friendly
-  Economical & Efficient



Outdoor Battery Cabinet Parameters

Technical Parameters	BC197DE	BC215DE	BC233DE
Battery Type	LFP		
Battery Module Capacity	17.92 kWh		
Number of Modules	11	12	13
Total battery Capacity	197 kWh	215 kWh	233 kWh
Nominal Voltage	704 V	768 V	832 V
Operating Voltage Range	616 V ~ 792 V	672 V ~ 864 V	728 V ~ 936 V
Charge/Discharge Rate	0.5C		
DoD	90%		
General Parameters	BC233DE		
Dimensions(WxDxH)	1300 x 1200 x 2380 mm		
Weight	< 2.5 T		
Installation Site	Outdoor		
IP Protection	IP54		
Anti Corrosion Level	C4		
Operation Humidity	5% ~ 95% (No Condensing)		
Operation Temperature	-30°C ~+ 50°C		
Max. operation Altitude	4000 m (> 3000 m Derating)		
Communication Port	Ethernet; CAN		
Communication Protocol	CAN; TCP		
Cooling Method	Air Conditioner		
Standards	IEC 62619-2017; UN 38.3; IEC 61000-6-2/4		

Product Specifications	KAC120D
Battery Side	
Max. Input Voltage	1000 V
Min. Input Voltage	580 V
DC Voltage at Nominal Operation	580 V ~ 1000 V
Max. DC Current	232 A
Max. DC Input Power	134 kW
Number of DC Inputs	1
AC Side (On Grid)	
Nominal AC Output Power	120 kW
Max. AC Output Power	132 kW
Max. AC Current	191 A
Nominal AC Voltage	400 V
AC Voltage Range	400 Vac, (-15% + 10%)
Nominal Grid Frequency/Frequency Range	50 / 60 Hz $\pm$ 5Hz
THDv	< 1.5% (Rated Power)
Adjustable PF Range	-1 ~+ 1
AC Side (Off Grid)¹⁾	
Nominal AC Voltage	230 / 400 V $\pm$ 3%; 3L+N+PE
THDv	< 1% (Resistive Load)
Nominal Grid Frequency/Frequency Range	50 / 60 Hz
Nominal AC Output Power	120 kW
Max. AC Output Power	132 kVA
Efficiency	
Max. Efficiency	98.5%
Protection	
Reverse Connection Protection	Yes
DC Switch	Yes
Over-Temperature Protection	Yes
Insulation Monitoring	Yes
DC/AC Surge Protection	Type II(DC side); Type III(AC side)
General Parameters	
Dimensions(WxDxH)	650 x 310 x 900 mm
Installation	Wall Mounted / Plug in
Weight	80 kg
Topology	Transformerless
IP Protection	IP66
Operation Temperature Range	-40 ~ 60°C (> 45°C Derating)
Operation Humidity Range	0 ~ 100% (No Condensing)
Cooling Method	Intelligent Air Cooling
Max. Operation Altitude	5000 m / (> 3000 m Derating)
Communication Port	RS-485 / CAN 2.0
Standards	CE; IEC 61000; IEC 62477-1; 2012; IEC 61727; IEC 62116; GB/T 34120; GB/T 34133

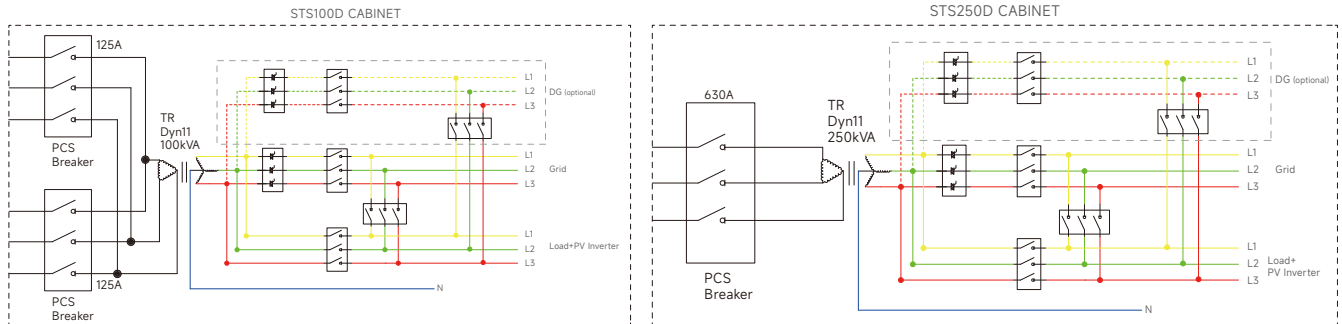
1) For off-grid application, STS250D automatic switching cabinet is needed.

STS100D/STS250D **NEW** Automatic Switching Cabinet

On-grid / Off-grid / 100-250 kVA



Block Diagram:



Parameter	STS100D	STS250D
Rated Voltage	400 V	400 V
Rated Current	144 A	360 A
Rated Frequency	50 Hz	50 Hz
Rated Power	100 kVA	250 kVA
Max. grid Input Power	200 kVA	500 kVA
Switch Time Between On/Off-grid	≤ 20ms	≤ 20 ms
PCS Input	125 A*2	630 A
Max. grid Input	400 A	1000 A
DG Input(Optional)	400 A	1000 A
Load Breaker	400 A	1000 A
Grid/DG Bypass Breaker	200 A*2	630 A*2
Isolation Transformer	100 kVA	250 kVA
Lightning Protection	Type II	Type II
Protection Degree	IP54	IP54
Relative Humidity	0 ~ 100%	0 ~ 100%
Operating Temperature	-25°C ~+ 45°C	-25°C ~+ 45°C
Cooling Type	Air Cooling	Air Cooling
Dimension(WxDxH)	1170 x 2380 x 1105 mm	900 x 2380 x 930 mm
Weight	791 kg	1250 kg
Operating Altitude	≤ 3000 m	≤ 3000 m
Communication	RS-485 / 4G / Ethernet	RS-485 / 4G / Ethernet
Installation	Tower - type	Tower - type

* The capacity of the PV inverter for AC coupling can't be larger than the capacity of PCS.

** One STS100D can be connected to a maximum of two KAC50DP.

*** One STS250D can be connected to a maximum of five KAC50DP or two KAC120D.



ESS-AELIO

Solax New Commercial energy Storage Solutions ► HYBRID C&I ESS CABINET



ROBUST

- Support both on-grid and off-grid operation
- Robust back-up ability, switch over time <10ms, up to 200% EPS output for 10s
- Support unbalanced loads on three phases



SAFE

- Four-level fire safety protection
- IP65 protection for Inverter and IP54 for cabinet
- AFCI optional
- AC&DC SPD type II, always guarding the inverter
- Smart IV Curve scan for early panel diagnosis



INTELLIGENT

- AI ready, forecasting solar generation and load consumption, smart energy management strategy
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support Micro-grid and a variety of scenarios
- Support 7x24h remote O&M and schedule deployment



ECONOMIC

- Maximum 200% PV oversized input
- Maximum 40A input current per MPPT, support high power solar panel
- Advanced LFP battery, single cabinet with up to 200kWh, expandable to MWh
- Support wireless meter solution

HYBRID C&I ESS CABINET

AELIO

“INTRODUCTION”



Aelio series is a highly integrated, all-in-one, C&I Hybrid energy storage cabinet with multiple application scenarios. It has outstanding advantages such as intelligent charge and discharge management, safety and reliability, and simple operation and maintenance.

First of all, Aelio cabinet uses high-density, high-safety, and high-performance LFP batteries. There are two models with capacity of 100kWh and 200kWh. When used in a single cabinet or multiple cabinets, it can charge and discharge stably according to the set working modes at different time periods, and the large-capacity battery cell of 280Ah also reduces the initial cost of the system.

Secondly, the cabinet is equipped with a self-developed Energy Management System (EMS) that can monitor the working status and abnormal alerts of each battery cell, PCS, and fire protection system in real-time. The local data storage capability allows for data analysis and verification for up to 1 year. The advanced EMS system also has leading advantages in intelligent control of different smart operation strate-

gies, autonomous scheduling based on local electricity prices, and comprehensive management of photovoltaic, energy storage systems, EV charging and generators at power plant level. These features improve the overall system efficiency and shorten the investment return period.

In addition, the cabinet also has multiple safety protection measures. It has built-in protection functions such as overvoltage, overcurrent, and overtemperature. It is also equipped with fireproof materials and 4 levels of fire protection system, which can promptly detect and respond to potential fire risks, effectively control the spread of fires and reduce the risk of safety accidents.

The cabinet is suitable for various C&I PV&ESS scenarios, including peak shaving, demand response, backup mode, photovoltaic and energy storage integration, and stable load consumption curves. It also supports applications such as virtual power plants(VPP) and frequency regulation.



	AELIO-P50B100	AELIO-P50B200	AELIO-P60B100	AELIO-P60B200
DC Side				
Max. PV input power [kW]	100		120	
Max. PV input voltage [V]		1000		
Start output voltage [V]		200		
Nominal input voltage [V]		650		
MPPT voltage range [V]		160 ~ 950		
No. of MPP trackers / Strings per MPP tracker	5(2 per MPPT)		6(2 per MPPT)	
Max. input current [A]		40		
Max. input short circuit current [A]		50		
AC Side				
Rated AC output power [kW]	50		60	
Rated AC output current [A]	72.2		86.6	
Max. AC output apparent power [kVA]	55		66	
Max. AC output current [A]	83.6		100.3	
Nominal AC voltage [V]		3P4W, 400/230, 380/220		
Rated AC grid frequency [Hz]		50/60		
Power Factor range		-1 ~ +1		
THDi (Rated power) [%]		< 3		
Battery Side				
Battery Type		LFP / 280Ah		
Nominal Capacity [kWh]	100	200	100	200
Rated Voltage [V]	358.4	716.8	358.4	716.8
Voltage Range [V]	280 ~ 408.8	560 ~ 817.6	280 ~ 408.8	560 ~ 817.6
Discharge Depth [%]		90		
Rated Charge/Discharge Current [A]		140		
Max Charge/Discharge Current [A]		160 (80 × 2)		
General				
Dimensions(with Inverter) (W×H×D) [mm]	1311 × 2300 × 1140	2067 × 2420 × 1200	1311 × 2300 × 1140	2067 × 2420 × 1200
Dimensions (without Inverter) (W×H×D) [mm]	1020 × 2300 × 1140	1680 × 2420 × 1200	1020 × 2300 × 1140	1680 × 2420 × 1200
Weight (with Inverter) [kg]	1600	2800	1600	2800
Weight (without Inverter) [kg]	1500	2700	1500	2700
Operating ambient temperature range [°C]		-30 ~ 55		
Relative Humidity(non-condensing) [%]		0 ~ 95		
Max. operating altitude [m]		3000		
Cooling Concept		Smart air cooling		
Ingress protection		IP54		
Fire Protection		(Optional: Aerosol / Novec1230) / Water		
Topology		Transformerless		
Standard		IEC62619, IEC63056:2000, IEC61000-6-2&6-4, IEC62477-1, UN38.3		

HYBRID C&I ESS CABINET

Inverter



Safe

- IP65 protection level
- AC&DC SPD type II, always guarding the inverter
- AFCI optional
- Smart IV Curve scan for early panel diagnosis



Intelligent

- AI ready, forecasting solar generation and load consumption, smart energy management strategy
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support smart scene function, intelligent loads management(e.g., Heat pump, EV charger)
- Micro-grid ready, supporting a variety of scenarios, both on-grid and off-grid, balancing power between PCS and Hybrid in real time
- Support 7x24h scheduling mode
- Support Wireless meter solution
- Dual independent battery ports are ready to expand battery capacity free



Robust

- Robust back-up ability, switch over time <10ms, up to 200% EPS output for 10s
- Support off-grid operation without battery



Economic

- Maximum 200% oversize and 200% PV input power
- Maximum 40A input current per MPPT, support high power solar panel



X3-AELI0-50K

X3-AELI0-60K

X3-AELI0-65K

DC Side			
Max. PV input power [kW]	100	120	121
Max. PV input voltage [V]		1000	
Start-up voltage [V]	200	200	200
Nominal input voltage [V]		650	
MPPT voltage range [V]		160 - 950	
No. of MPP trackers / Strings per MPP tracker	5 (2 per MPPT)	6 (2 per MPPT)	6 (2 per MPPT)
Max. input current per MPPT [A]		40	
Max. input short circuit current per MPPT [A]		50	
AC Side			
Rated AC output power [kW]	50	60	60.5
Rated AC output current [A]	72.2	86.6	87.3
Max. AC output apparent power [kVA]	55	66	66
Max. AC output current [A]	83.6	100.3	100.3
Nominal AC voltage [V]		3P/(N)/PE, 400/230, 380/220	
Rated AC grid frequency [Hz]		50 / 60	
Power Factor range		-1 ~ +1	
THDi (Rated power) [%]		< 3	

X3-AELIO-50K

X3-AELIO-60K

X3-AELIO-65K

Battery Side

Battery type	Lithium - ion		
Battery voltage range [V]	180 - 850		
Max. charge / discharge current [A]	160		

EPS Output(with battery)

Peak apparent AC power [kVA]	55	66	66
Nominal voltage [V]; Frequency [Hz]	3P/(N)/PE, 400/230V, 380/220V; 50/60Hz		
Max. output continuous current [A]	83.6	100.3	100.3
Switch time [ms]	< 10		

General

Max. efficiency [%]	98		
European weighted efficiency [%]	97.7		
Ingress protection	IP65		
Operating ambient temperature range [°C]	- 35 ~ 60		
Max. operating altitude [m]	< 3000		
Relative humidity [%]	0 ~ 100		
Typical noise emission [dB]	< 70		
Dimensions (WxHxD) [mm]	820 × 670 × 257		
Net weight [kg]	< 100		
Cooling concept	Smart air cooling		
Communication interfaces	RS485, CAN(BMS), CAN, USB, DI, DO, DRM		
Display	LCD (optional)		

Power Consumption

Standby consumption (night) [W]	< 10		
---------------------------------	------	--	--

Protection

Over/under voltage protection	Yes		
DC isolation protection	Yes		
DC reverse-polarity protection	Yes		
Grid monitoring	Yes		
DC injection monitoring	Yes		
Back feed current monitoring	Yes		
Residual current detection	Yes		
Anti-islanding protection	Yes		
Over temperature protection	Yes		
SPD (DC/AC)	Type II/Type II		
Arc-fault circuit interrupter(AFCI)	OPT		

Standard

Safety	EN/IEC 62109-1/-2		
EMC	EN 61000-6-1/2/3/ 4, EN 61000-3-11/12, EN 55011, IEC 62920		
Cetification	VDE4105, G99, AS4777, EN50549, CEI 0-21, IEC61727, PEA/MEA, NRS-097-2-1, RD1699, TOR		

HYBRID C&I ESS CABINET

Pack



TP-HR140

Battery Type	LFP 280Ah
Total Capacity [kWh]	14.3
Battery Configuration	1P16S
Nominal Battery Voltage [V]	51.2
Battery Voltage Range [V]	40-58.4
Weight [kg]	115
Charge/Discharge Rate	≤ 0.5C
Dimensions(WxHxD) [mm]	461 × 228 × 778
Operating Temperature Range [°C]	-20 ~ 53
Relative Humidity [%]	0 ~ 95
Altitude [m]	3000
Ingress Protection	IP20
Communication to PCS	CAN

TRENE

C&I ESS CABINET



SAFE

- Intelligent air cooling for optimal heat dissipation
- Four-level fire protection
- AC&DC type II SPD



ECONOMIC

- Advanced LFP battery quality assured
- High power density with less space
- Expandable to MWh



INTELLIGENT

- AI ready, forecasting solar generation and load consumption
- Smart energy management strategy
- VPP ready, SolaX cloud supports resource aggregator (2030.5, OpenADR)
- Support Micro-grid and a variety of scenarios
- Support 7x24h remote O&M and schedule deployment
- Support wireless meter solution



ROBUST

- Support on-grid and off-grid solution
- Self-developed BMS&EMS on SolaX Cloud platform
- 1 year history system data backed up on EMS
- Support Cell level balance, smart temperature check and control



TRENE series C&I energy storage cabinet

is a highly integrated, all-in-one solution with versatile application scenarios.

TRENE series C&I energy storage cabinet is a highly integrated, all-in-one solution with versatile application scenarios. TRENE air-cooled series provides efficient, safe, and stable smart energy storage solutions.

Firstly, the cabinet adopts high-density, high-safety, and high-performance LFP cells. With a capacity of 215kWh per cabinet, it can reliably perform charging and discharging operations for single or multiple cabinets, with a lifespan of over 10 years. The large-capacity 280Ah battery cells also reduce the overall system investment cost.

Secondly, the cabinet is equipped with a self-developed Energy Management System (EMS) that can monitor the working status and abnormal alerts of each battery cell, PCS, and fire protection system in real-time. The local data storage capability allows for data analysis and verification for up to 1 year. The advanced EMS system also has leading advantages in intelligent control of different smart operation strategies,

TRENE “INTRODUCTION”

autonomous scheduling based on local electricity prices, and comprehensive management of photovoltaic, energy storage systems, EV charging and generators at power plant level. These features improve the overall system efficiency and shorten the investment return period.

Additionally, the cabinet integrates multiple safety protection measures. It has built-in protection functions such as overvoltage, overcurrent, and over-temperature, as well as fire-resistant materials and 4-level fire protection system to promptly detect and respond to potential fire risks. This effectively controls the spread of fires and reduces the risk of safety accidents.

The cabinet is suitable for various commercial and industrial scenarios, including peak shaving, demand response, backup mode, photovoltaic and energy storage integration, and stable load consumption curves. It also supports applications such as virtual power plants (VPP) and frequency regulation.

TRENE-P100B215-I

AC Side

Rated AC output power [kW]	100
Rated AC output current [A]	144.4
Max. AC output apparent power [kVA]	110
Nominal AC voltage [V]	400 (-20% ~ +15%)
Rated AC grid frequency [Hz]	50 / 60
Power Factor range	0.99 leading ~ 0.99 lagging
THDi (Rated power) [%]	< 3
Max. efficiency [%]	98%

Battery

Battery type	LFP 280Ah
Nominal capacity [kWh]	215
Rated voltage [V]	768
Voltage range [V]	600 ~ 876
Discharge depth [%]	90
Max. charge/discharge current [A]	140

General

Dimension (W×H×D)[mm]	1680 × 2420 × 1200
Weight [kg]	2800
Available Operating Temperature Range [°C]	-30 ~ 55
Relative Humidity [%]	0 ~ 95
Altitude [m]	3000
Cooling Concept	Smart air cooling
Protection Class	IP54
Fire Protection	(Optional: Aerosol / Novec1230) / Water
Topology	Transformerless
Certificates	IEC62619, IEC63056:2000, IEC61000-6-2&-6-4, IEC62477-1, UN38.3, GB/T36276, GB/T34131

C&I ESS CABINET

Inverter



X3-TRENE-100K-I

AC Side

Rated AC output power [kW]	100
Rated AC output current [A]	145.0
Max. AC output apparent power [kVA]	110(10mins)
Nominal AC voltage [V]	3P/(N)/PE, 400/230, 380/220
Rated AC grid frequency [Hz]	50 / 60
Power Factor range	0.99 leading ~ 0.99 lagging
THDi (Rated power) [%]	< 3

Battery

Battery type	Lithium - ion
Battery voltage range [V]	600 ~ 950
Max. charge / discharge current [A]	140

General

Max. efficiency [%]	98
Ingress protection	IP20
Operating ambient temperature range [°C]	-25 ~ 60
Max. operating altitude [m]	3000
Relative humidity [%]	0 ~ 95%
Dimensions (WxHxD) [mm]	480 × 260 × 720
Net weight [kg]	70
Cooling concept	Force air cooling
Communication interfaces	RS485/CAN/Ethernet/DI
Topology	Transformerless

Protection

Over/under voltage protection	Yes
DC reverse-polarity protection	Yes
Residual current detection	Yes
Anti-islanding protection	Yes

BESS-125KW/261KWH

BES-P125X261E / BES-P125X261U

The LIVOLTEK BES Series is a versatile solution applicable to charging stations, factories, industrial parks, and commercial buildings. Designed for power storage, models BES-P125X261 enable emergency power during outages, peak-load shifting, surplus energy trading, and virtual capacity enhancements. Boasting a high-density, modular design, this energy storage system minimize spatial needs, enhance transportability, and simplify installation and maintenance, ensuring top efficiency from deployment through operation.



High Performance

- Smaller size, high energy density
- Balanced between packs to improve energy utilization
- 3S fusion, short response time



Assured Safety

- Efficient liquid cooling temperature control to maintain optimal operating status
- With multi-level security architecture design such as cell level, PACK level, system level, cloud monitoring, etc.
- Multiple battery clusters are connected to independent modular PCS to achieve single cluster management of battery clusters and avoid capacity loss of parallel battery clusters



Intelligent Design

- Smart energy management cloud platform, cell-level refined monitoring and diagnosis
- All operating data of the energy storage system is connected to the cloud for real-time monitoring and unattended operation
- EMS supports 1-2 years of historical system data backup



Flexible Adaptability

- All in one design, flexible system expansion
- Occupying an area of only 1.35m², can be deployed in a dispersed manner, centrally dispatched, and convenient for flexible placement
- Pre-assembled at the factory, high system integration, simple transportation and deployment



BESS-125KW/261KWH

BES-P125X261E / BES-P125X261U

BESS

Model	BES-P125X261E		BES-P125X261U
Battery Parameters			
Battery Type	LFP 314Ah		
Battery Module Specification	52.24kWh / 1P52S		
Battery Capacity/kWh	261		
Rated DC Voltage/V	832		
Battery Voltage Range/V	741 ~ 936		
Rated Charge/Discharge Current/A	157		
AC Parameters			
Rated AC Power/kW	125		
Max. Apparent Power/kVA	137.5		
Rated AC Voltage/V	380/400	480	
Rated AC Frequency/Hz	50/60		
Adjustable Power Factor Range	-1 (Leading)- 1 (Lagging)		
Max. Output Current/A	198.5	165.4	
THDi(Rated power)	<3%		
GENERAL			
System Efficiency	88%		
Dimension (W*H*D)	1000*2380*1350 mm		
Weight	2600 kg		
Operation Temperature	-30 ~ 60 °C		
Relative Humidity	0 ~ 95%		
Max. Operating Altitude/m	4000 (>2000 derating)		
Cooling	Liquid Cooling		
Ingress Protection	IP55		
Anti-corrosion Level	C3/C5 optional		
Fire Protection	Aerosol /Water		
Topology	Non-isolated		
Communication Interface	RS485 / CAN / Ethernet / 4G / WIFI		
Certificates and Approvals	IEC 61000, IEC 62619, IEC 63056, IEC 62477, IEC 62933, RoHs, UN38.3		



G-MAX SERIES

ALL-IN-ONE

The G-MAX Series accommodates "All-in-one" design philosophy, integrating battery with longevity, intelligent BMS, high performance PCS, preventive safety system, smart distribution system and heat dissipation management system into one standard container for standardized manufacturing (for outdoor application) and simpler installation.



Safe



Economic



Intelligent



Augmentable

Features

- **Safe:** Compartmentalized design with a preventive alarm system.
- **Economic:** Zero power loss through efficient temperature control and frequency variation.
- **Intelligent:** Offers multiple operation modes, including Peak Shaving, Load Shedding, PV-Storage Energy Control, and Frequency Regulation. Operating data can be transmitted to Fox ESS Cloud via Wi-Fi, 4G or 5G.
- **Augmentable:** Preconfigured during manufacturing, plug and play onsite. Capable of parallel connection upgrades for flexible system size application.



For more Fox ESS Product info,
 please visit www.fox-ess.com



Fox ESS

G-MAX SERIES

GM215kWh-100kW-2h

MODEL	GM215kWh-100kW-2h
BATTERY MODULE DATA	
Battery Type [V/Ah]	LFP 3.2/280
Battery Pack Capacity [kWh]	53.76
Battery System Capacity [kWh]	215
Operating Voltage Range [V]	672 ~ 876
Number of Temperature Sensor	128
Battery Pack Protection Level	IP67
AC OUTPUT DATA	
Rated Output Power [kW]	100
Peak Output Power [kW]	110
THDi [%]	<3
Nominal Voltage [Vac]	380/400, 3L/N/PE
Power Factor	>0.99
Adjustable Power Factor Range	-1 ~ 1 (leading ~ lagging)
Nominal Frequency [Hz]	50/60
SYSTEM DATA	
Round Trip Efficiency [%]	>89
DOD [%]	0 ~ 100
Cycle Life	≥8000@70%EOL
Communication Interfaces	Ethernet
Ingress Protection	IP54
Cooling type	Liquid cooling
Altitude [m]	≤3000
Operation Temperature [°C]	-25 ~ 55
Operation Humidity [%]	0 ~ 95, non-condensing
Noise [dB]	<75 @1m
Dimension (W*D*H) [mm]	1040*1500*2200
Fire Protection	Aerosol
Weight [kg]	<2500
Grid Code	CEI-021/EN 50549-1/EN 50549-2
Safety/EMC	IEC 62619/IEC 60730-1 appended H/IEC 62477-1/IEC 61000-6-2,4/UN 38.3

Lynx C Series

100kWh | C&I Battery System

GoodWe's Lynx C 100kWh outdoor battery system is tailored for small to medium-sized commercial and industrial (C&I) energy storage applications. Its modular design not only minimizes the impact of local failures but also allows for swift and straightforward module replacements. Combined with GoodWe ET 40-50kW hybrid inverters, the Lynx 100kWh battery system offers a compact, easy-to-install, and high-performance turnkey energy storage solution. This powerful combination enables efficient energy backup, peak shaving, and streamlined load management. Moreover, the system supports the parallel connection of batteries and inverters, allowing for the expansion of the energy storage system size and enabling flexible configurations.*



COMING
SOON



Smart Control & Monitoring

- Remote monitoring & updates
- Peak shaving



Friendly & Thoughtful Design

- Highly integrated cabinet for easy transportation and installation
- Modular design for easier O&M



Superb Safety & Reliability

- Reliable LFP technology with high cycle stability
- IP55 and C4 corrosion protection for indoor & outdoor installation
- Fire suppression and explosion prevention design



Flexible & Adaptable Applications

- Compatible with GoodWe hybrid inverter ET 40-50kW
- Support multi-cabinet parallel connection for easy system expansion

Technical Data		GW100KWH-D-10	GW100KWH-D-10 (Extension)
			
Battery Data			
Cell Type	LFP (LiFePO4)		
Module Nominal Energy (kWh)	14.4		
Number of Packs	7		
Usable Energy (kWh)*1	100		
Nominal Voltage (V)	672		
Operating Voltage Range (V)	567 ~ 756		
Charging Temperature Range (°C)	0 ~ +55		
Discharging Temperature Range (°C)	-25 ~ +55		
Max. Charge / Discharge Current (A)*2	Charge: 90; Discharge: 120		
Depth of Discharge	100%		
Max. Charge / Discharge Power (kW)	Charge: 60.5; Discharge: 80.6		
Efficiency			
Round-trip Efficiency	94%		
General Data			
Storage Temperature (°C)	0 ~ 35 (<One Year); -10 ~ 0 (≤One Month); 35 ~ 40 (≤One Month)		
Relative Humidity	0 ~ 95%, No condensation		
Max. Operating Altitude (m)	3000		
Heating & Cooling	Air Conditioner		
Communication Interface	CAN		
Weight (kg)	approx.1520	approx.1430	
Dimension (W × H × D mm)	approx.1200 × 2070 × 1050	approx.900 × 2070 × 1050	
Ingress Protection Rating	IP55		
Anti-Corrosion*3	C4 (Optional upgrade to C5)		
Fire Suppresion	Optional, Aerosol / Perfluorhexone		
Country of Manufacture	China		

*1: Test conditions, 100% DOD, 0.5C charge & discharge at +25 ±2°C for battery system at beginning life. System Usable Energy may vary with different Inverter.

*2: Actual Dis- / Charge Current and power derating will occur related to Cell Temperature and SOC. And, Max C-rate continuous time is affected by SOC, Cell Temperature, Atmosphere environment temperature, Air-conditioner refrigeration capacity.

*3: Excluding locks.

*: Please visit GoodWe website for the latest certificates.

*: All pictures shown are for reference only. Actual appearance may vary.

*: As a part of our policy of continuous improvement, we reserve the right to alter design and specifications without further notice.

C&I Energy Storage Solution

The Lynx C 100kWh battery system is paired with a hybrid inverter from the GoodWe ET 40-50kW Series to form a compact storage solution. Additionally, when paired with the Static Transfer Switch (STS) Box from GoodWe, this storage solution can not only enable dependable UPS-level switching to backup mode but also interact with diesel generators to efficiently replenish batteries.



A convenient compartment for the hybrid inverter is included. The hybrid inverter of the ET 40-50kW Series must be purchased separately. Refer to the ET 40-50kW or STS datasheet for detailed specifications.

Extension of the Energy Storage Solution

The combined energy storage system can be expanded by connecting up to two additional Lynx C 100kWh extension batteries (model GW100KWH-D-10-Extension), resulting in 300kWh battery capacity.



Parallel connection of the hybrid inverter will enable further system expansions.



*The parallel connection feature for ET 40-50kW inverters is expected in 2024.

GOODWE

ESA Series

125kW/261kWh
C&I Energy Storage System

The GoodWe ESA Series (125kW/261kWh) is a fully integrated all-in-one energy storage system designed to meet the demands of commercial and industrial (C&I) applications, such as industrial parks and commercial complexes. With its modular design, the system offers scalability, allowing businesses to expand capacity as needed while ensuring faster installation and simplified operation and maintenance (O&M). Built for safety and reliability, it incorporates multi-level protection from the cell level to the cabinet level, ensuring stable and secure energy storage for a wide range of applications.



Grid Support

- 100% unbalanced output
- LVRT, HVRT, THD<3%
- 110% long-term overloading



Superb Safety & Reliability

- Type II Surge Protection on AC side
- Six-level active & passive fire protection
- High-temperature resistant: 50°C no derating



Friendly & Thoughtful Design

- Highly integrated cabinet for easy transportation and installation
- High energy density: 177.6kWh/m²
- Plug & Play design for faster installation and lower installation costs



Smart Control & Monitoring

- Remote monitoring & updates via various communication methods
- Multi-scenario energy management supported

Technical Data

GW125/261-ESA-LCN-G10

Battery Data

Cell Type	LFP (LiFePO4)
Cell Capacity (Ah)	314
Module Nominal Energy (kWh)	52.25
Number of Packs	5
Rack Nominal Energy (kWh)	261.25
Rack Usable Energy (kWh)	261.25
Nominal Voltage (V)	832
Operating Voltage Range (V)	676 ~ 936
Max. Continuous Charge / Discharge Current (A)	188
Max. Charge / Discharge Current (A)	198.5
Max. Charge / Discharge Rate	0.5P
Depth of Discharge	90% ~ 100% (90% Recommended)

AC Output Data (On-grid)

Nominal Output Power (kW)	125
Max. Output Power (kW)	137.5@400V AC; 130.6@380V AC
Nominal Apparent Power (kVA)	125
Nominal Apparent Power Output to Utility Grid (KVA)	125
Nominal Apparent Power from Utility Grid (kVA)	125
Max. Apparent Power (kVA)	137.5@400V AC; 130.6@380V AC
Max. Apparent Power Output to Utility Grid (KVA)	137.5@400V AC; 130.6@380V AC
Max. Apparent Power from Utility Grid (kVA)	137.5@400V AC; 130.6@380V AC
Nominal Output Voltage (V)	400 / 380, 3L / N / PE
Output Voltage Range (V)	340 ~ 440 / 323 ~ 418
Nominal AC Grid Frequency (Hz)	50 / 60
AC Grid Frequency Range (Hz)	47.5 ~ 52.5 / 57.5 ~ 62.5
Max. AC Output Current (A)	198.5
Max. AC Current Output to Utility Grid (A)	198.5
Max. AC Current from Utility Grid (A)	198.5
Nominal Output Current (A)	180.4@400V AC; 190@380V AC
Power Factor	~1 (0.8 lag to 0.8 lead)
Max. Total Harmonic Distortion	<3%

AC Output Data (Off-grid)

Nominal Output Power (kW)	125
Max. Output Power (kW)	137.5@400V AC; 130.6@380V AC
Nominal Apparent Power (kVA)	125
Nominal Output Apparent Power to Grid (kVA)	125
Nominal Input Apparent Power from Grid (kVA)	125
Max. Apparent Power (kVA)	137.5@400V AC; 130.6@380V AC
Max. Output Apparent Power to Grid (kVA)	137.5@400V AC; 130.6@380V AC
Max. Input Apparent Power from Grid (kVA)	137.5@400V AC; 130.6@380V AC
Nominal Output Voltage (V)	400 / 380, 3L / N / PE
Output Voltage Range (V)	340 ~ 440 / 323 ~ 418
Nominal Output Frequency (Hz)	50 / 60
AC Grid Frequency Range (Hz)	47.5 ~ 52.5 / 57.5 ~ 62.5
Max. AC Output Current (A)	198.5
Max. AC Current Output to Grid (A)	198.5
Max. AC Current from Grid (A)	198.5
Nominal Output Current (A)	180.4@400V AC; 190@380V AC
Power Factor	~1 (0.8 lag to 0.8 lead)
Output THDi (@Linear Load)	<3%

Efficiency

Max. PCS Efficiency	98.6%
System Efficiency	88.0%

Protection

Battery Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Surge Protection	Type II

General Data

Charging Temperature Range (°C)	0 ~ +55
Discharging Temperature Range (°C)	-20 ~ +55
Derating Temperature (°C)	45
Storage Temperature (°C)	-25 ~ +55
Relative Humidity	10% ~ 95%
Max. Operating Altitude (m)	4000 (2000 derating)
Cooling Method	Pack: Liquid Cooling; PCS: Smart Fan Cooling
User Interface	LED, WLAN + APP
Communication Protocol	Modbus TCP, Modbus RTU
Weight (kg)	2580
Dimension (W x H x D mm)	1050 x 2250 x 1400
Noise Emission (dB)	≤70
Topology	Non-isolated
Ingress Protection Rating	IP55 (Battery cabinet)
Anti-Corrosion	C4 (C5 optional)
Fire Suppression	Aerosol / Water
Charge / Discharge Switching Time	<60ms

*: Please visit GoodWe website for the latest certificates.

Yüksek Gerilim Sıvı Soğutmalı Batarya Grupları



Temel Özellikler	PBQ-166300	PBQ-166300 Plus	PBQ-1331300
Pil Tipi	LiFePO ₄ - Prizmatik		
Seri/Paralel Konfigürasyon	1P52S	1P52S	1P416S
Nominal Gerilim	166.4V	166.4V	1331.2V
Nominal Kapasite	302Ah	304Ah	302Ah
Nominal Enerji Kapasitesi	50.252kWh	50.58kWh	402.022kWh
Çalışma Gerilim Aralığı	145.6V - 187.2V	140.4-187.2V	1164.8V - 1497.6V
Maks. Şarj Gerilimi	187.2V	187.2V	1497.6V
Standart Şarj/Deşarj Akımı	150A / 150A	304A /304A	150A / 150A
Döngü Ömrü (**)	≥6000 döngü (*)	≥6000 döngü (**)	≥6000 döngü (*)
Normal Çalışma Sıcaklığı	25°C		
Şarj Sıcaklığı	0~55°C	0~50°C	0~55°C
Deşarj Sıcaklığı	-20~55°C	-30~60°C	-20~55°C
Depolama Sıcaklığı	-10~60°C	-30~60°C	-10~60°C
Çalışma Sıcaklığı	-20~55°C		
Kalan Kapasite Kaybı	Aylık ≤ 3% (25°C)		
Garanti	10 yıl		
Fonksiyonel Özellikler			
Haberleşme	CAN, RS485	CAN, RS485	CAN
Ölçeklenebilirlik	Maks. 8 seri birim		Maks. 16 paralel birim
Rakım	Sıvı Soğutmalı		
BMS Korumaları	UV, OV, OC, UT, OT, SC (PDU ile)		UV, OV, OC, UT, OT, SC
LED Göstergeler	Yok		Alarm, Run, SOC
Devre Kesici	Yok		Entegre Master BMS Ünitesi
Sigorta	Var		Yok
Mekanik Özellikler			
Koruma Seviyesi	IP67		
Nem	5% - 85% RH (yoğuşmasız)		
Yükseklik	<3000m		
Boyut (ExDxY)	848x1157x244.5 mm	1160x790x250mm	988x1200x2390 mm
Ağırlık	370±10 kg	345±5kg	3400±50 kg

(*) Test Koşulları: 25°C, 80% SOH

(**) Test Koşulları: 25°C, 70% SOH

Yüksek Gerilim Sıvı Soğutmalı Batarya Konteynerleri



Temel Özellikler	PBQ20-416-1C
Hücre Tipi	LiFePO ₄ - Prizmatik
Seri/Paralel Konfigürasyon	10P416S
Nominal Gerilim	1331.2V
Nominal Akım	304Ah
Nominal Enerji Kapasitesi	4046kWh
Çalışma Gerilim Aralığı	1123.2V - 1497.6V
Maks. Şarj Gerilimi	1497.6V
Çevrim Ömrü (*)	≥6000 döngü
Operasyonel Sıcaklık	-30~50°C
Fonksiyonel Özellikler	
İletişim	CAN
Soğutma	Sıvı Soğutma (Entegre Kapalı Döngü)
Yangın Korunma	Aerosol otomatik yangın koruması, su sisi
BMS Korumaları	UV, OV, OC, UT, OT, SC
LED Göstergeleri	Alarm, Run, SOC
Devre Kesici	Her Kümenin Ana BMS'sine Entegre 1500 V
EMS	Opsiyonel
Mekanik Özellikler	
Koruma Seviyesi	IP54
Nem	0 - %85 RH (yoğuşmasız)
Rakım	≤2000m
Boyut (GxDxY)	6800x2550x2896 mm
Ağırlık	40 Ton

(*) Test Koşulları: 25°C,70%SOH

Dış Ortam Enerji Depolama



Geleceğin Yolu: Enerji Depolama Sistemleri ve Elektrikli Araç Şarj Altyapısı



Enerji depolama sistemleri (EDS), özellikle sınırlı şebeke kapasitesine sahip bölgelerde elektrikli araç (EV) şarj altyapısının hızla yaygınlaştırılmasında kilit bir rol oynar. Yenilenebilir enerji kaynakları gibi güneş enerjisi kullanımını optimize ederek, EDS şarj istasyonları için güvenilir ve sürdürülebilir bir elektrik sağlar.

Güneş enerjisi santralleri ile EDS'nin entegrasyonu merkezi olmayan ve esnek şarj altyapısı gelişimini teşvik eder. Ayrıca, EDS pahalı şebeke yükseltme ihtiyacını azaltarak başlangıç yatırım maliyetlerini önemli ölçüde düşürür ve önceden erişilemeyen alanlara şarj istasyonu kurulumunu mümkün kılar. Genel olarak, EDS sürdürülebilir ve verimli EV şarj ekosistemlerinin teşvik edilmesinde hayati öneme sahiptir.

Uygulamalar

+ Talep kontrolü

+ Yük kaydırma

+ Yedek güç kaynağı

+ Tepe düzleme

+ UPS / köprüleme gücü

+ Şebeke esnekliği hizmeti

Dış Ortam Enerji Depolama Üniteleri



Batarya Özellikleri	POD-A100	POD-A230	POD-L400	POD-L400 PRO
Batarya Tipi	LiFePO ₄ - Prizmatik			
Hücre Kapasitesi	100Ah		302Ah	304Ah
Seri/Paralel Konfigürasyon	2P160S	3P240S	1P416S	1P416S
Nominal Gerilim	512V	768V	1331.2V	1331.2V
Çalışma Gerilim Aralığı	440V - 568V	660V - 852V	1144V - 1476.8V	1123.2V - 1497.6 V
Nominal Enerji Kapasitesi	102.4kWh	230.4kWh	402.02kWh	404.68kWh
Döngü Ömrü (*)	≥6000 döngü (*)		≥6000 döngü (**)	≥6000 döngü (**)
Çalışma Sıcaklığı	-20~55°C			
Şarj / Deşarj Sıcaklığı	1C / 1C		0.5C/0.5C	1C / 1C
Maksimum Güç Değeri	102.4kW	230.4kW	201.01kW	404.68kW
Garanti	10 yıl			
Fonksiyonel Özellikler				
İletişim	CAN/RS485			
Ölçeklenebilirlik	Maks. 7 paralel ünite	Maks. 5 paralel ünite	Maks. 10 paralel ünite	Maks. 10 paralel ünite
Soğutma	Hava Soğutmalı		Sıvı Soğutmalı	
Yangın Koruma	Aerosol otomatik yangın koruması			
Dengeleme	Pasif			Aktif
EMS	Opsiyonel			
SBMS Birimi	Opsiyonel			
Şebeke Bağlantı Kutusu	Opsiyonel			
Fiziksel Özellikler				
Koruma Seviyesi	IP54			
Nem	0% - 85% RH (yoğuşmasız)			
Rakım	<3000m			
Boyut (GxDxY)	1100x1200x2400mm	1700x1800x2327mm	1400x1350x2250mm	1500x1450x2800mm
Ağırlık	1700kg	3500kg	4500kg	4000kg

(*) Test Koşulları: 25°C, 70% SOH

(**) Test Koşulları: 25°C, 80% SOH

(***) Test Koşulları: 25°C, 70%SOH

COMMERCIAL AND INDUSTRIAL BATTERY SOLUTIONS



FLEXIBLE SYSTEM

Easy access to PV and diesel generator, intelligent multi energy management. One investment can fulfill different requirements.



Emergency Backup

Providing power to critical loads during a power outage.



Renewable Integration

Storing excess energy generated by renewable sources during periods of high production and releasing during times of peak demand.



EVC Complimentary

Storing excess renewable or grid energy and using it to charge EVs, reducing reliance on traditional power grids and fossil fuels.



Peak Shaving

Managing overall demand to eliminate short-term demand spikes. This process lowers and smooths out peak loads, which reduces the overall cost of demand charges.



Microgrid Building

A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode.



Bill Management

Arbitrage feature of the battery is utilized. Manage bills by storing energy when electricity prices are low and using the stored energy when prices are high.

AIR COOLING C&I SYSTEM COMPONENTS

Vestel air cooling C&I battery solution is an all-in-one product that includes PCS, EMS, HVAC, and STS components. MPPT and transformer features can be provided depending on the project requirements.

Electrical Cabinet

Static Transfer
Switch (STS)
+
Bidirectional AC/DC
Converter
+
Solar Controller
(MPPT)

Battery Cabinet

75-150-225-300
kWh Single Battery
Cabinet
+
HVAC System



SYSTEM COMPONENTS

Vestel C&I battery solution is an all-in-one product that includes PCS, EMS, HVAC, and STS components. MPPT and transformer features can be provided depending on the project requirements.

Electrical Cabinet

Static Transfer
Switch (STS)
+
Bidirectional AC/DC
Converter
+
Solar Controller
(MPPT)

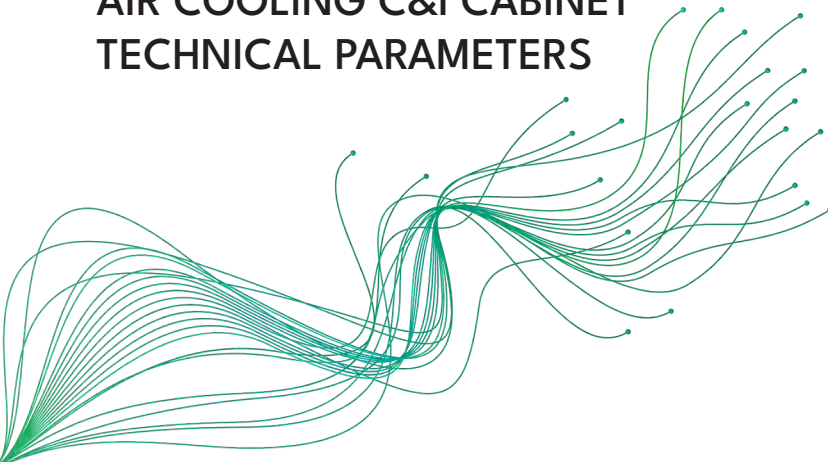
Battery Cabinet

75-150-225-300
kWh Single Battery
Cabinet
+
HVAC System



C&I BATTERY SOLUTIONS

AIR COOLING C&I CABINET TECHNICAL PARAMETERS



PARAMETERS	VSTL-CBS-75-50	VSTL-CBS-150-100	VSTL-CBS-225-150	VSTL-CBS-300-200
PV Parameters				
MPPT Voltage Range	DC 200V-700V			
Full Power MPPT Voltage Range	DC 370V-700V			
MPPT Channel Qty	0-2 (Optional)			
Single-Circuit MPPT Max Current	135 A			
Single-way MPPT Rated Power)	50 kW			
AC parameters (grid connected)				
Rated Output Power	50 kW	100 kW	150 kW	200 kW
Max Output Power	55 kW	110 kW	165 kW	220 kW
Rated Grid Voltage	AC 380/400 V			
Grid Voltage Range	-15%~+10%			
Rated Grid Frequency	50/60 Hz			
Grid Frequency Range	±2 Hz			
Output Current Harmonics	≤3% (rated power)			
DC Component	<0.5%In			
Power Factor	-0.9~+0.9			
Overload Capacity	105%]: continous operation; (105%~120%]: 10 min; 120%): stop operation			
AC parameters (off grid)				
Rated Output Power	50 kW	100 kW	150 kW	200 kW
Max Output Power	55 kW	110 kW	165 kW	220 kW
Rated Grid Voltage	3W+N+PE, 380/400 V			
Output Voltage Harmonics	3% linear full load			
Rated Frequency	50/60 Hz			
Overload Capacity	105%]: continous operation; (105%~120%]: 10 min; 120%): stop operation			
Battery				
Energy of Each Module	5.12 kWh			
Module Quantity	15	30	45	60
Total Power	76.8 kWh	153.6 kWh	230.4 kWh	307.2 kWh
Running Time	1.5 Optional by changing module qty h			

C&I BATTERY SOLUTIONS

AIR COOLING C&I CABINET BATTERY MODULE SPECIFICATIONS



PARAMETERS	
Enclosure Size	19"3.2U
Lithium Chemistry	LiFePO4
Voltage Range	46V-57.5V (Nom.51.2V)
Rated Capacity	102 Ah
Rated Energy	5.12 kWh
Circuit breaker	200 A, 2 pcs
Cooling	Smart Fan
Operating Temperature	0 to 50 °C9
Max Charge Current	1C recommended 0.5C
Max Discharge Current	1C recommended 0.7C
Cycle Life	≥4000 times %70 SOC, 25 °C 1C/ 1C ≥5000 times %80 SOC, 25 °C 0.5C/ 0.5C
Weight	47 kg
Dimensions (WxLxH)	430x440x140 mm
Communication Protocols	RS485, CANBUS, Ethernet
Safety Standards	IEC63056, IEC62619, IEC62620, UN38.3

C&I BATTERY SOLUTIONS

IT CAN BE SCALED UP AND
EASILY CUSTOMIZED



PARAMETERS	VSTL-CBS-75-50	VSTL-CBS-150-100	VSTL-CBS-225-150	VSTL-CBS-300-200
System Efficiency				
Max Efficiency	%95			
Protection	YES			
AC and DC Switch	YES			
Grid Monitoring	YES			
Surge Protection	DC/AC 2nd level			
Basic Parameters				
Dimension (WxLxH)	1680x1500x1700 mm	1680x2270x1700 mm	1680x3050x1700 mm	1680x3830x1700 mm
Weight	1395 kg	2470 kg	3545 kg	4620 kg
Isolated Transformer	YES			
On/off Grid Switching	STS			
Protection	Outdoor IP54			
Working Temperature	-20~55°C (>45°C derating)			
Relative Humidity	0~95% (no condensing)			
Cooling	Intelligent air cooling (intelligent heating optional)			
Max. Working Altitude	4000 m (>2000 m derating)			
EMS	Cloud based integrated, with Touch Screen			
Communication	RS485, CAN, LAN			
Communication Protocol	Modbus-RTU, Modbus-TCP, CAN2.0B			

LIQUID COOLING C&I SYSTEM COMPONENTS

Vestel liquid cooling C&I battery solution has both only DC cabinet System option which support bigger capacities with parallel connection capability and also all in one cabinet option to provide a compact and ready design. Vestel, can support you for any use cases with several C&I solutions.



C&I BATTERY SOLUTIONS

LIQUID COOLING C&I CABINET TECHNICAL PARAMETERS



PARAMETERS	418KWH	261KWH
AC Side		
Rated output power	N/A	125kW
Maximum AC power	N/A	138kW (continuous for 1 minute)
Grid voltage	N/A	400V ac/3P+N+PE
Grid frequency	N/A	50Hz/60Hz
AC voltage harmonics	N/A	≤3% (linear load)
DC component	N/A	<0.5%I _{pn}
Power factor range	N/A	0.99
Energy conversion efficiency	N/A	≥89%
DC Side		
Cell type	LFP 314Ah	LFP 314Ah
Grouping method	1P416S	1P260S
Rated energy	418kWh	261.00kWh
Rated capacity	314Ah	314Ah
Rated voltage	1331.2 Vdc	832V
Recommended voltage range	1164.8-1497.6 Vdc	DC 728-936V
Charging/discharging rate	≤1C	≤0.5C
Maximum current	314Ah	157A
Discharge depth	95%DOD	95%DOD
General Parameters		
Cycle life	≥8000 times (25±2° C)	≥8000 times (25±2° C)
Protection level	IP65	IP65
Cooling method	Active liquid cooling	Active liquid cooling
Operating temperature	-25 to 55° C	-25 to 55° C
Relative humidity	0-95%RH	0-95%RH
Working Altitude	≤2000m	≤2000m
Dimensions (W*D*H)	1,300 × 1,300 × 2,400 mm	1050*1350*2400mm
Total weight	Approximately 3,700kg	Approximately 2,670kg
Fire protection system	PACK-level aerosol (Optional) + RACK-level aerosol fire extinguishing	PACK-level aerosol (Optional) + RACK-level aerosol fire extinguishing
Communication	Ethernet/RS485/CAN	Ethernet/RS485/CAN
Standards complied with	UN38.3, IEC62619, IEC63056, IEC62281, IEC62619, IEC61000	UN38.3, IEC62619, IEC63056, IEC62281, IEC62619, IEC61000

C&I BATTERY SOLUTIONS

LIQUID COOLING C&I CABINET BATTERY MODULE SPECIFICATIONS



PARAMETERS	52S PACK (314AH)	52S PACK (314AH)
Model	52S Battery Pack	52S Battery Pack
Cell Configuration	52S1P	52S1P
Design Capacity	314Ah	314Ah
Cell Chemistry	Lithium Iron Phosphate (LFP)	Lithium Iron Phosphate (LFP)
Cell Under Voltage (per cell)	2.8V	2.8V
Cell Over Voltage (per cell)	3.6V	3.6V
Voltage Range	DC 145.6 - 187.2V (Nominal 166.4V)	DC 145.6 - 187.2V (Nominal 166.4V)
Rated Energy	52.250Wh (166.4V × 280Ah)	52,249.6Wh (166.4V × 314Ah)
Maximum CHARGE/DISCHARGE Current	314Ah @1C	157A @0.5C
SAFE Pin Activation Enabled	NO	NO
Communication Protocols	Daisy Chain, UART	Daisy Chain, UART
Cooling Method	Active liquid cooling	Active liquid cooling
Circuit breaker	550A @250Vdc, 1pcs	315A @250Vdc, 1pcs
Manual Safety Disconnect	350A@1500Vdc, 1pcs	350A@1500Vdc, 1pcs
Cell Balancing Enabled	Yes	Yes
Internal or External Temperature Sensor	External Enabled	External Enabled
BMU Features	Voltage Monitoring (Max. 52 sampling) Temperature Monitoring (Max. 52 Sampling) Passive Balancing Overcurrent Self Protection Voltage Drop Monitoring (Optional) Manual Safety Clamp Detection (Optional)	Voltage Monitoring (Max. 52 sampling) Temperature Monitoring (Max. 52 Sampling) Passive Balancing Overcurrent Self Protection Voltage Drop Monitoring (Optional) Manual Safety Clamp Detection (Optional)
Power Consumption (Active Mode)	min. 60mA ; max. 100mA	min. 60mA ; max. 100mA
Power Consumption (Shut Down Mode)	min. 60uA ; max. 100uA	min. 60uA ; max. 100uA
Display Mode	2-bar LED(Run,Alarm) (Optional)	2-bar LED(Run,Alarm) (Optional)
Applicable System Voltage Level	≤1500V DC	≤1500V DC
Operating Temperature	-25 to 55°C	-25 to 55°C
Storage Temperature	-20°C to 45°C	-20°C to 45°C
Relative Humidity	0% to 95% RH	0% to 95% RH
IP Rating	IP65	IP65
Dimensions	790 x 1140 x 248 mm	790 x 1140 x 248 mm
Weight	315kg	330kg
Cycle Life	≥ 8000 cycles (70% SOH @25°C)	≥ 8000 cycles (70% SOH @25°C)
Compliance	CE, RoHS	CE, RoHS
Certifications	IEC 62619, IEC 62281	IEC 62619, IEC 62281