

EK90 HS5 Three Phase All-in-One Solution

Your Ultimate Smart Home Butler



Smart Home Energy Ecosystem

The eManager 5.0 and elekeeper 5.0 connect PV, storage, EV charger, smart plug, heat pump, and more for fully automated whole-home energy management.

EVDC charger enables V2H & V2G capabilities***.



Easy, Fast, and Smart Installation

- Modular design with blind-mate connectors, no complex external cabling.
- Innovative Wireless-pro meter, providing longer range, more stable connectivity, and wiring-free installation.
- Effortless App commissioning features 3-step initialization and One Click Self-diagnosis (Meter & CT Phase Auto Adjustment)
- No backup retrofit required: 63A bypass, 50% single-phase high output power.



Total Peace of Mind with 9-layer Protection

- 5-layer Battery Protection
- V2 flame-retardant material coverage
- Full-coverage temperature sensor
- Thermal insulation board
- Thermal aerosol fire suppression
- Decompression valve

- 4-layer System Protection
- DC ground-fault protection
- AI AFCI PV protection
- Grid fault protection
- DC Bus protection

- Top-standard UL9540A&B guarantees battery safety.



Future-Ready Scaling with Ultimate Battery Performance

- Built-in DCDC optimizer
- Fully independent charge & discharge
- Eliminates wooden barrel effect
- Seamless capacity expansion
- Built to Last: 12,000 cycles** with premium 314Ah cell



AI-powered Energy Higher returns for every kWh

• elekeeper 5.0

- AI Keeper – Intelligent energy manager
- AI Care – AI-powered system health guardian
- AI Designer – Intelligent plant design platform
- VPP ready – empower a connected energy ecosystem
- AI Edge – Keeps running smoothly even on weak connections

• AI Saving 3.0

- AI + Multi-scenario (Peak Shaving, EV Charging, VPP, Temporary Scheduling...)



MODEL	EK90 HS5-10K-T3-14/16/18/21/25/27/28/35/36/42/45/50/54	EK90 HS5-15K-T3-14/16/18/21/25/27/28/35/36/42/45/50/54	EK90 HS5-20K-T3-14/16/18/21/25/27/28/35/36/42/45/50/54
Input (PV)			
Recommended max. PV power [W]	20000	30000	40000
Max. input voltage [V]		1000	
MPPT voltage range [V]		150~900	
Operating Voltage Range [V]		150~1000	
Start-up voltage [V]		160	
Nominal DC input voltage [V]		600	
Max. input current per MPPT [A]	20/20/20		40/20/20
Max. short-circuit current per MPPT [A]	25/25/25		50/25/25
Number of MPP trackers		3	
No. of Strings per MPP Tracker	1+1+1		2+1+1
Input (DC Battery)			
Battery Type		LiFePO4	
Battery Voltage Range [V]		600~900	
Communication Interface for BAT		CAN	
Max. Battery Quantity in one system		6	
AC Output/Input (On Grid)			
Rated output power [W]	9999	15000	20000
Rated apperant power [VA]	9999	15000	20000
Max. apparent power [VA]	9999	16500	22000
Rated. output current [A]	14.5	21.7	29.0
Max. output current [A]	14.5	23.9	31.9
Rated output/input voltage [V]		3L+N+PE, 220/380, 230/400	
Rated AC grid frequency [Hz]		50/60	
Max. Input Current (per phase) * [A]		63	
Adjustable power factor		0.8 leading~ 0.8 lagging	
Total current harmonic distortion		< 3%	
AC Output (Back-up)			
Max. Output Apparent Power [VA]	10000	15000	20000
Peak Output Apparent Power [VA]	20000,10s	30000,10s	40000,10s
Max. Current (per phase) [A]	14.5	21.7	29.0
Maximum unbalanced load power [W]	5000	7500	10000
Rated output voltage [V]		3L+N+PE, 220/380, 230/400	
Rated AC grid frequency [Hz]		50/60	
Adjustable power factor		0.8 leading~ 0.8 lagging	
Total current harmonic distortion		< 3%	
Switch time [ms]		≤10	
Efficiency			
Euro Efficiency		97.6%	
Max. Efficiency		98.2%	
Protection			
Insulation Monitoring		Integrated	
Residual Current Monitoring		Integrated	
DC Reverse Polarity Protection		Integrated	
Anti-islanding Protection		AFD	
AC Short-circuit Protection		Integrated	
AC Overcurrent/Overvoltage Protection		Integrated	
DC Switch		Integrated	
surge protection		Type II DC/AC	
AFCI		Integrated	
General Data			
Inverter topology		Non-isolation	
Protective class		I	
Overvoltage category		DC II, AC III	
Dimensions (W / H / D) [mm]		Inverter: 835 / 350 / 270 Battery pack: 835 / 270 / 270 Battery base: 835 / 70 - 80 / 270	
Weight [kg]		Inverter: 44.5 Battery pack: EK90 BU5-7.0-TV: 71.7 EK90 BU5-9.0-TV: 79.2 Battery base: 8	
Operating temperature range [°C]		-30 ~ + 50 °C	
Relative humidity range		5% ~ 95% Non-condensing	
Corrosion resistance grade		C4	
Max. operating altitude [m]		3000	
Cooling		Smart air cooling	
Degree of protection		IP66	
Communication		WLAN / Fast Ethernet / RS485 / eSolar 4G pro /eSolar AIO3 pro	
Standard		IEC62109-1/2, IEC62040, IEC62477, EN61000-6-1/2/3/4, IEC62619, AS4777.2, SA TS 5398	
Warranty [Year]		Refer to the warranty policy	

SAJ All-in-One Energy Storage System-Battery Combination

suffix 14/16/18/21/25/27/28/35/ 36/42/45/50/54 for battery system configuration	14	16	18	21	25	27	28	35	36	42	45	50	54
Input/Output (DC Battery)													
Battery model #1	EK90 BU5-7.0-TV												
Number of battery modules [pcs]	2	1	0	3	1	0	4	5	0	6	0	2	0
Battery model #2	EK90 BU5-9.0-TV												
Number of battery modules [pcs]	0	1	2	0	2	3	0	0	4	0	5	4	6
Total energy capacity [kWh]	14	16	18	21	25	27	28	35	36	42	45	50	54
Usable energy capacity [kWh]	14	16	18	21	25	27	28	35	36	42	45	50	54
Depth of discharge	100%												
Voltage Range [V]	600-900												
Rated Current (Max. Continuous Current [A]) for EK90 HS5-10K-S3-14/16/18/21/ 25/27/28/35/36/42/45/50/54	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Dimensions (W /H / D) [mm]	835 / 540 / 270			835 / 810 / 270			835 / 1080 / 270	835 / 1350 / 270	835 / 1080 / 270	835 / 1620 / 270	835 / 1350 / 270	835 / 1620 / 270	
Weight [kg]	136	147.2	158.4	204	226.4	35.4	272	340	316.8	408	396	452.8	475.2
Rated Current (Max. Continuous Current [A]) for EK90 HS5-15K-S3-14/16/18/21/ 25/27/28/35/36/42/45/50/54	18	20.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
Dimensions (W /H / D) [mm]	835 / 540 / 270			835 / 810 / 270			835 / 1080 / 270	835 / 1350 / 270	835 / 1080 / 270	835 / 1620 / 270	835 / 1350 / 270	835 / 1620 / 270	
Weight [kg]	136	147.2	158.4	204	226.4	35.4	272	340	316.8	408	396	452.8	475.2
Rated Current (Max. Continuous Current [A]) for EK90 HS5-20K-S4-14/16/18/21/ 25/27/28/35/36/42/45/50/54	18	20.8	23.6	27	29	29	29	29	29	29	29	29	29
Dimensions (W /H / D) [mm]	835 / 540 / 270			835 / 810 / 270			835 / 1080 / 270	835 / 1350 / 270	835 / 1080 / 270	835 / 1620 / 270	835 / 1350 / 270	835 / 1620 / 270	
Weight [kg]	136	147.2	158.4	204	226.4	35.4	272	340	316.8	408	396	452.8	475.2

* The built-in 63A bypass function enables the whole-house backup power, and the current can be configured on the elekeeper App.

** Provided by the battery manufacturer. Test conditions: 25±2°C, 0.5C charge and discharge rate, SOH 60%.

*** This feature is currently under development and coming soon.

Manufacturer: Guangzhou Sanjing Electric Co., Ltd.

Country of manufacture: China