

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 HS5-8K-T3-X	EK90 HS5-10K-T3-X	EK90 HS5-12K-T3-X	EK90 HS5-12K-T3-X-IE	EK90 HS5-15K-T3-X	EK90 HS5-20K-T3-X*
Input (PV)						
Recommended max. PV power [W]	16000	20000	24000	24000	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		
Max. short-circuit current per MPPT [A]				25		
Number of MPP trackers				3		
No. of Strings per MPP Tracker				1+1+1	1+1+2	
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]	8000	9999	12000	11000	15000	20000
Rated apperant power [VA]	8000	9999	12000	11000	15000	20000
Max. apparent power [VA]	8800	9999	13200	11000	16500	22000
Rated. output current [A]	11.6	14.5	17.4	15.9	21.7	29.0
Max. output current [A]	12.8	14.5	19.1	15.9	23.9	31.9
Rated output/input voltage [V]				3L+N+PE, 220/380, 230/400, 240/415		
Rated AC grid frequency [Hz]				50/60		
Max. AC Input Current (per phase) ** [A]				63		
Adjustable power factor				0.8 leading~ 0.8 lagging		
Total current harmonic distortion				THDI < 3%		
AC Output (Back-up)						
Max. Output Apparent Power [VA]	8000	10000	12000	12000	15000	20000
Peak Output Apparent Power [VA]	16000, 10s	20000, 10s	24000, 10s	24000, 10s	30000, 10s	40000, 10s
Max. Current (per phase) [A]	11.6	14.5	17.4	17.4	21.7	29.0
Max. unbalanced load power [W]	4000	5000	6000	6000	7500	10000
Rated output voltage [V]				3L+N+PE, 220/380, 230/400, 240/415		
Rated AC grid frequency [Hz]				50/60		
Adjustable power factor				0.8 leading~ 0.8 lagging		
Total current harmonic distortion				THDI < 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:BU5-6.0-TV: 60.4; BU5-7.0-TV: 68; 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		
Warranty [Year]				Refer to the warranty policy		
Standard				EN 62109-1/2, EN 61000-6-2/4, EN 50438, EN 50549, C10/11, IEC 62116, IEC 61727, RD 1699, RD 413, UNE 206006, UNE 206007, NTS, CEI 0-16, CEI 0-21, AS 4777.2, NBR 16149, NBR 16150 VDE-AR-N 4105, VDE 0126-1-1		

* X for battery system configuration: X=6/7/9/12/14/15/16/18/21/24/25/27/30/28/35/36/40/42/45/50/54 kWh; each number presents the energy storage capacity for different models; For battery combinations and ratings refer to the battery combination datasheet.
 ** 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, 0.2C charge and discharge rate, SOH 60%.
 **** This feature is currently under development and coming soon.