

ESI-5-12K-T1

5 / 6.5 / 8 / 9.9 / 9.99 / 10 / 12 kW

Three-phase hybrid inverter



User-friendly

- Easy installation, support both all-in-one and split installations
- Natural heat dissipation, no extra noise



Flexible applications

- Supports 100% three-phase unbalanced loads
- Seamless switchover between on and off-grid (10ms)



Safe & Reliable

- Up to 3 MPPTs with AFCI
- IP66 rated design

Inverter Module	ESI-5K-T1	ESI-6K-T1	ESI-6.5K-T1	ESI-8K-T1	ESI-9.9K-T1-A	ESI-9.99K-T1-A	ESI-10K-T1	ESI-12K-T1
PV Input								
Recommended Max. PV Power	10 kWp	12 kWp	13 kWp	16 kWp	20 kWp	20 kWp	20 kWp	24 kWp
Max. Input Voltage	1000 Vd.c.							
Start-up Voltage ^[1]	200 Vd.c.							
Rated Input Voltage	600 Vd.c.							
MPP Voltage Range	160-950 Vd.c.							
Number of MPPT	3							
Max. Number of Input String per MPPT	1/1/1							
Max. Input Current	20/20/20 A							
Max. Isc	25/25/25 A							
Battery								
Voltage Range	350-435 Vd.c.							
Number of Battery Input Channel	1							
Max. Charging Power	10 kW							
Max. Discharging Power	5 kW	6 kW	6.5 kW	8 kW	9.9 kW	9.99 kW	10 kW	10 kW
Max. Charging Current	25 A							
Max. Discharging Current	15 A	18 A	19.5 A	24 A	29.7 A	29.9 A	30 A	30 A
Battery Type ^[2]	Lithium-ion							
BMS Communication	CAN							
AC Backup								
Rated Output Voltage	3N--+PE, 380/400/415 Va.c.							
Rated Output Frequency	50/60 Hz							
Rated Output Power	5 kW	6 kW	6.5 kW	8 kW	9.9 kW	9.99 kW	10 kW	12 kW
Rated Output Current	7.6/7.2/6.9 A	9.1/8.7/8.3 A	9.9/9.4/9.0 A	12.1/11.6/11.1 A	15.0/14.3/13.8 A	15.2/14.4/13.9 A	15.2/14.5/13.9 A	18.2/17.4/16.7 A
Rated Apparent Power	5 kVA	6 kVA	6.5 kVA	8 kVA	9.9 kVA	9.99 kVA	10 kVA	12 kVA
Max. Apparent Power	5.5 kVA	6.6 kVA	7.15 kVA	8.8 kVA	9.9 kVA	9.99 kVA	11 kVA	13.2 kVA
Max. Output Current	8.3/8.0/7.6 A	10.0/9.6/9.2 A	10.9/10.3/9.9 A	13.3/12.8/12.2 A	15.0/14.3/13.8 A	15.2/14.4/13.9 A	16.7/15.9/15.3 A	20.0/19.1/18.3 A
Peak Output Apparent Power ^[3]	2 times of rated power, 10s							
THDv(@ linear load)	< 3%							
Power Factor Range	0.8 lagging - 0.8 leading							
Switching Time	10ms default							
Asymmetric load	Yes, Supports 100% three-phase unbalanced load							
AC Grid								
Rated Voltage	3(N)--+PE, 380/400/415 Va.c.							
Rated Frequency	50/60 Hz							
Rated Output Power	5 kW	6 kW	6.5 kW	8 kW	9.9 kW	9.99 kW	10 kW	12 kW
Rated Output Current	7.6/7.2/6.9 A	9.1/8.7/8.3 A	9.9/9.4/9.0 A	12.1/11.6/11.1 A	15.0/14.3/13.8 A	15.2/14.4/13.9 A	15.2/14.5/13.9 A	18.2/17.4/16.7A
Rated Apparent Power	5 kVA	6 kVA	6.5 kVA	8 kVA	9.9 kVA	9.99 kVA	10 kVA	12 kVA
Max. Apparent Power	5.5 kVA	6.6 kVA	7.15 kVA	8.8 kVA	9.9 kVA	9.99 kVA	11 kVA	13.2 kVA
Max. Output Current	8.3/8.0/7.6 A	10.0/9.6/9.2 A	10.9/10.3/9.9 A	13.3/12.8/12.2 A	15.0/14.3/13.8 A	15.2/14.4/13.9 A	16.7/15.9/15.3 A	20.0/19.1/18.3A
Max. Input Current	15.2/14.5/13.9 A	18.2/17.4/16.7 A	19.8/18.8/18.1 A	24.2/23.2/22.2 A	30.3/29.0/27.8 A	30.3/29.0/27.8 A	30.3/29.0/27.8 A	33.3/31.9/30.6 A
THDi	< 3%							
Power Factor Range	0.8 lagging - 0.8 leading							
Efficiency								
Max. MPPT Efficiency	99.9%							
Max. Efficiency	98.0%	98.0%	98.0%	98.0%	98.2%	98.2%	98.2%	98.2%
European Efficiency	97.0%	97.0%	97.0%	97.0%	97.5%	97.5%	97.5%	97.5%
Max. Efficiency of Charging/Discharging ^[4]	97.6%	97.6%	97.6%	97.6%	97.8%	97.8%	97.8%	97.8%
Protection								
DC Switch	Yes							
PV Reverse Connection Protection	Yes							
Battery Reverse Connection Protection	Yes							
Output Short Circuit Protection	Yes							
Output Overcurrent Protection	Yes							
Output Overvoltage Protection	Yes							
Insulation Impedance Detection	Yes							
Residual Current Detection	Yes							
Anti-islanding Protection	Yes (Method: Reactive power disturbance)							
Surge Protection ^[5]	PV: Type II, AC: Type II							
General Parameter								
Inverter Topology	Non-Isolation							
Protective Class	Class I							
IP Rating	IP66							
Overvoltage Category	AC III, DC II							
Operating Temperature Range	-30℃ ~ +60℃ (derating above +45℃)							
Relative Humidity Range	5%-95%							
Max. Operating Altitude	4000m (derating above 2000m)							
Standby Self-consumption ^[6]	< 10W							
Installation Method	Wall Mounted							
Dimensions (W×H×D)	708×440×170 mm							
Cooling Mode	Natural							
Weight	30 kg							
Communication	RS485, Optional: WiFi/4G/LAN							
Display	LCD & APP							
Country of Manufacture	China							

[1] Minimum PV voltage to start MPPT operation. [2] Please refer to document "SOFAR inverter Model compatible battery list". [3] Full battery and sun.
[4] Battery-AC maximum efficiency of battery charge and discharge. [5] According to EN/IEC 61643-11. [6] Standby loss at rated input voltage.

*All specifications are subject to change without notice.