

THREE-PHASE HYBRID INVERTER

10 / 12 / 15 / 20kW



Robustness

- Maximum 200% PV input and 40A per MPPT
- 200% overload capability for 10 seconds
- Max. charging/discharging current of 350A



Safety

- IP66 protection rating
- Integrated type II surge protection
- AI based AFCI protection(Optional)



Flexibility

- Multiple inverters in parallel connection
- Flexible expansion of battery power and capacity
- Integration of generators to extend backup duration



Intelligent

- UPS-level switching time < 4ms (Typical)
- Supports 100% unbalanced on both the BACKUP and GRID port
- Multi-function EMS integrated, high utilization ratio of solar energy

THREE-PHASE HYBRID INVERTER

Model	THY-T10K-LV		THY-T12K-LV		THY-T15K-LV		THY-T20K-LV	
PV Input								
Recommended Max. PV P ower	20 kWp		24 kWp		30 kWp		40 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			2					
Max. Number of Input Strings per MPPT			2/2					
Max. Input Current			40/40 A					
Max. Isc			50/50 A					
Battery								
Voltage Range			40-60 Vd.c.					
Number of Battery Input Channels			1					
Max. Charging P ower			20 kW					
Max. Discharging P ower	10 kW		12 kW		15 kW		20 kW	
Max. Charging Current			350 A					
Max. Discharging Current	210 A		240 A		300 A		350 A	
Battery Type ^[2]			Lead-acid or Lithium-ion					
BMS Communication			RS-485/CAN					
AC Backup								
Rated Output Voltage			3N~+PE, 380/400/415 Va.c.					
Rated Output Frequency			50/60 Hz					
Rated Output P ower	10 kW		12 kW		15 kW		20 kW	
Rated Output Current	15.2/14.5/13.9A		18.2/17.4/16.7 A		22.8/21.7/20.9 A		30.4/28.9/27.8A	
Rated Apparent P ower	10 kVA		12 kVA		15 kVA		20 kVA	
Max. Apparent P ower	11 kVA		13.2 kVA		16.5 kVA		22 kVA	
Max. Output Current	16.7/15.9/15.3 A		20.0/19.1/18.3 A		25.1/23.8/23.0 A		33.4/31.8/30.6 A	
Peak Output Apparent P ower ^[3]			2 times of rated power, 10s					
THDv(@ linear load)			< 3%					
Switching Time			4 ms default					
Asymmetric load			Yes, Supports 100% three-phase unbalanced load					
AC Smartload/Generator								
Rated Output Voltage			3N~+PE, 380/400/415 Va.c.					
Rated Output Frequency			50/60 Hz					
Rated Output P ower	10 kW		12 kW		15 kW		20 kW	
Rated Output Current	15.2/14.5/13.9A		18.2/17.4/16.7 A		22.8/21.7/20.9 A		30.4/28.9/27.8A	
Rated Apparent P ower	10 kVA		12 kVA		15 kVA		20 kVA	
Max. Apparent P ower	11 kVA		13.2 kVA		16.5 kVA		22 kVA	
Max. Output Current	16.7/15.9/15.3 A		20.0/19.1/18.3 A		25.1/23.8/23.0 A		33.4/31.8/30.6 A	
AC Grid								
Rated Voltage			3N~+PE, 380/400/415 Va.c.					
Rated Frequency			50/60 Hz					
Rated Output P ower	10 kW		12 kW		15 kW		20 kW	
Rated Output Current	15.2/14.5/13.9A		18.2/17.4/16.7 A		22.8/21.7/20.9 A		30.4/28.9/27.8A	
Rated Apparent P ower	10 kVA		12 kVA		15 kVA		20 kVA	
Max. Apparent P ower	11 kVA		13.2 kVA		16.5 kVA		22 kVA	
Max. Output Current	16.7/15.9/15.3 A		20.0/19.1/18.3 A		25.1/23.8/23.0 A		33.4/31.8/30.6 A	
Max. Input Current ^[4]	40 A		45 A		50 A		60 A	
THDi			< 3%					
Power Factor Range			0.8 lagging - 0.8 leading					
Efficiency								
Max. MPPT Efficiency			99.9%					
Max. Efficiency			97.6%					
European Efficiency			97.0%					
Max. Efficiency of Charging/Discharging ^[5]			95.0%					
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-island Protection			Yes					
Surge Protection ^[6]			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 °C ~ +60 °C (derating above + 45°C)					
Relative Humidity Range			5%-95%					
Max. Operating Altitude			4000 m (derating above 2000 m)					
Standby Self-consumption ^[7]			< 15 W					
Installation Method			Wall Mounted					
Dimensions(WxHxD)			485x690x290 mm					
Cooling Mode			Intelligent Airflow					
Weight			52 kg					
Communication			RS485, Optional: Wi-Fi/4G/ LAN					
Display			LCD & APP					

[1] Minimum PV voltage to start MPPT operation. [2] Please refer to document "SO FAR inverter Model compatible battery list". [3] Full sun and battery. [4] Continuous AC passthrough current from grid to load. [5] Battery-AC maximum efficiency of battery charge and discharge. [6] According to EN/IEC 61643-11. [7] Standby loss at rated input voltage.

*All specifications are subject to change without notice.