

SINGLE PHASE HYBRID INVERTER



Product Code: ATE-HINV1PH3-6KW

Family: Smart Energy

Subcategory: 1PH Hybrid Inverter



Product Overview

Artic Tech ATE-HINV1PH3-6KW is an advanced hybrid inverter solution engineered for intelligent power conversion and energy optimization. Designed to enhance system efficiency and operational flexibility, it enables seamless integration with renewable sources and battery storage systems for stable and adaptive energy management.

Product Features

- Advanced hybrid inverter architecture supporting simultaneous management of PV input, battery storage, and grid interaction.
- High conversion efficiency for optimized energy utilization and reduced system losses.
- Scalable system configuration to adapt to various residential and commercial energy demands.
- Smart monitoring compatibility for real-time performance supervision and system diagnostics.

Model	ATE-HINV1PH 3KW	ATE-HINV1PH 3.68KW	ATE-HINV1PH 4KW	ATE-HINV1PH 4.6KW	ATE-HINV1PH 5KW	ATE-HINV1PH 6KW
PV Input						
Recommended Max. PV Power	6000 Wp	7360 Wp	8000 Wp	9200 Wp	10000 Wp	12000 Wp
Max. Input Voltage	550 Vdc					
Start-Up Voltage	100 Vdc					
Rated Input Voltage	360 Vdc					
MPPT Voltage Range	85 - 520 Vdc					
Number of MPPT	2					
Max. Number of Input Strings per MPPT	1 / 1					
Max. Input Current	16 / 16 A					
Max. Isc.	22.5 / 22.5 A					

Battery						
Voltage Range	350 - 435 Vdc					
Number of Battery Input Channels	2					
Max. Charging Power	3 kW	3.68 kW	4 kW	4.6 kW	5 kW	6 kW
Max. Discharging Power	3 kW	3.68 kW	4 kW	4.6 kW	5 kW	6 kW

Max. Charging Current	20 A
Max. Discharging Current	20 A
Battery Type	Lithium-ion
BMS Communication	CAN

AC Backup						
Rated Output Voltage	L+N+PE, 220/230/240 V.a.c					
Rated Output Frequency	50 / 60 Hz					
Rated Output Power	3 kW	3.68 kW	4 kW	4.6 kW	5 kW	6 kW
Rated Output Current (A)	13.6/13.0/12.5	16.7/16.0/15.3	18.2/17.4/16.7	20.9/20.0/19.2	22.7/21.7/20.8	27.3/26.1/25.0
Rated Apparent Power	3 kVA	3.68 kVA	4 kVA	4.6 kVA	5 kVA	6 kVA
Max. Apparent Power	3 kVA	3.68 kVA	4 kVA	4.6 kVA	5 kVA	6 kVA
Max. Output Current (A)	13.6/13.0/12.5	16.7/16.0/15.3	18.2/17.4/16.7	20.9/20.0/19.2	22.7/21.7/20.8	27.3/26.1/25.0
Peak Output Apparent Power	4500VA, 60s	5520VA, 60s	6000VA, 60s	6900VA, 60s	7500VA, 60s	9000VA, 60s
THDv(@ linear load)	< 3%					
Switching Time	10 ms default					

AC Grid						
Rated Voltage	L+N+PE, 220/230/240 V.a.c					
Rated Frequency	50 / 60 Hz					
Rated Output Power	3 kW	3.68 kW	4 kW	4.6 kW	5 kW	6 kW
Rated Output Current (A)	13.6/13.0/12.5	16.7/16.0/15.3	18.2/17.4/16.7	20.9/20.0/19.2	22.7/21.7/20.8	27.3/26.1/25.0
Rated Apparent Power	3 kVA	3.68 kVA	4 kVA	4.6 kVA	5 kVA	6 kVA
Max. Apparent Power	3 kVA	3.68 kVA	4 kVA	4.6 kVA	5 kVA	6 kVA
Max. Output Current (A)	15.0/14.3/13.8	16.7/16.0/15.3	20.0/19.1/18.3	20.9/20.0/19.2	25.0/23.9/22.9	30.0/28.7/27.5
Max. Input Current (A)	27.3/26.1/25.0	33.5/32.0/30.7	36.4/34.8/33.3	41.8/40.0/38.3	45.5/43.5/41.7	54.5/52.2/50.0
THDi	< 3%					
Power Factor Range	0.8 lagging - 0.8 leading					



Efficiency		
Max. MPPT Efficiency	99.9%	
Max. Efficiency	97.7%	97.8%
European Efficiency	97.0%	97.1%
Max. Efficiency of Charging/Discharging	97%	

Protection	
DC Switch	Yes
PV Reverse Connection Protection	Yes
Battery Reverse Connection Protection	Yes
Output Short Circuit Protection	Yes
Output Short Circuit Protection	Yes
Output Overvoltage Protection	Yes
Insulation Impedance Detection	Yes
Residual Current Detection	Yes
Anti-island Protection	Yes
Surge Protection	PV: Type II, AC: Type II

Protection	
Inverter Topology	Non-Isolation
Protective Class	Class I
IP Rating	IP65
Overvoltage Category	AC III, DC II
Operating Temperature Range	-10°C ~ +50°C (derating above + 45°C)
Relative Humidity Range	5%-95%
Max. Operating Altitude	4000m (derating above 2000m)
Standby Self-consumption	< 10 W
Dimensions(W×H×D)	708×410×170 mm
Cooling Mode	Natural
Weight	26 kg
Communication	CAN/RS485/Wi-Fi, Optional: 4G/LAN
Display	LCD & APP