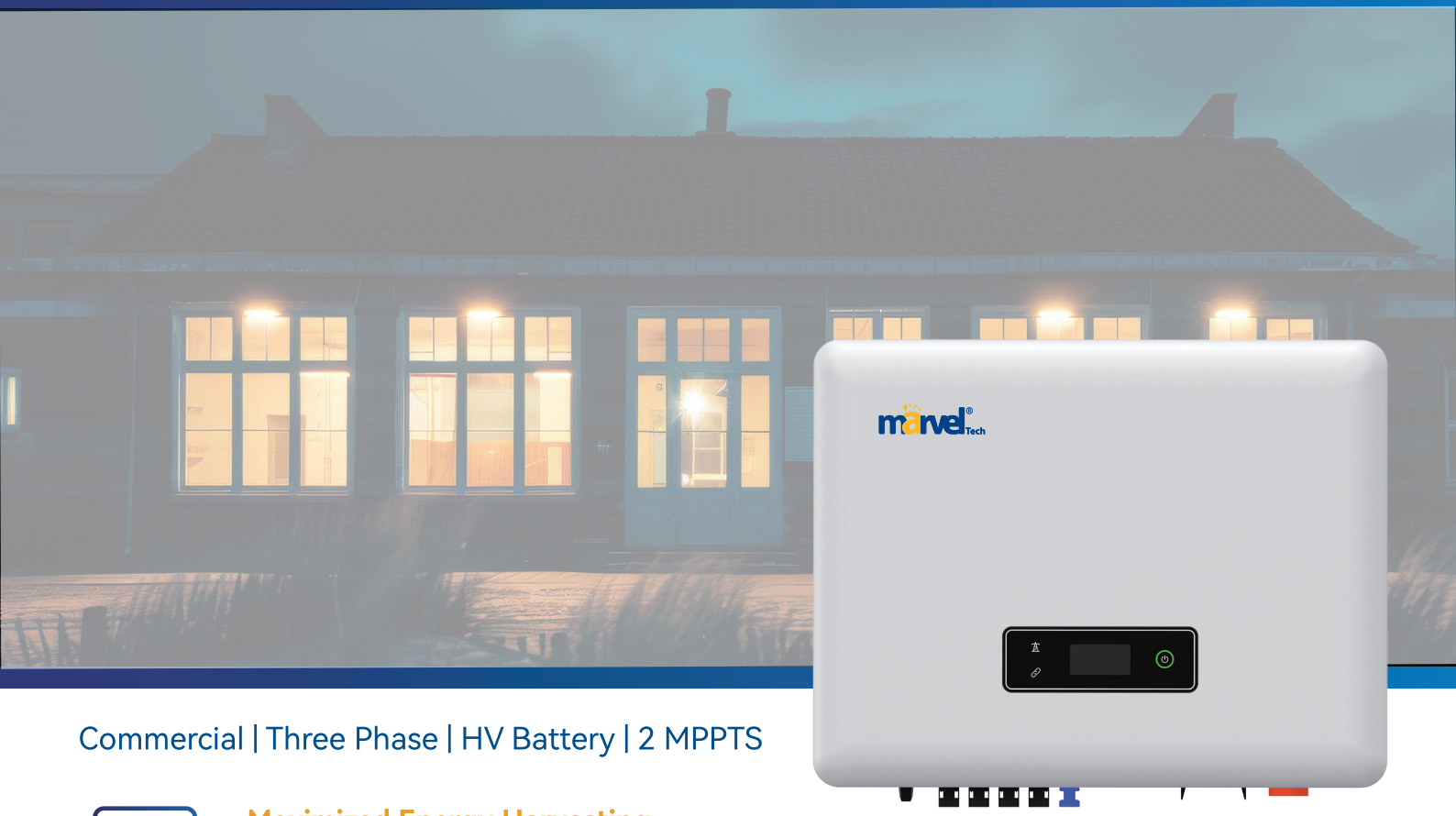
Three Phase Hybrid Inverter

marvel® Tech

MHSI-04HP3-10~20KW



Commercial | Three Phase | HV Battery | 2 MPPTS

Maximized Energy Harvesting

- 110% unbalanced output enhances self-consumption
- 40A charging/discharging for efficient energy transfer
- **Continuous 110% AC overloading sustains power**
- Smooth transition to backup power ensures continuity **during power outages**

Engineered for Versatility

- Wide 135-750V range fits diverse batteries
- 120% max backup @60s handles overloads
- IP65 protects both indoors and outdoors

Intelligent Energy Dynamics

- **Five work modes for diverse use**
- SuperToU Station Management: Supports flexible and customizable operation modes.
- Centralized smart management for efficiency
- Supports diesel generators for diverse energy sourcing

Simplified Interaction

- Remote upgrades maintain system health
- OLED and App for easy control
- The newly enhanced Marvel EMS platform for peak intelligent energy management

30A

Max. PV Input Current

40A

Max. Charge/Discharge

110%

Unbalanced Output

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Hybrid Inverter

Model		MHSI-10K-04HP3	MHSI-12K-04HP3	MHSI-15K-04HP3	MHSI-20K-04HP3
PV Input					
Recommended Max. Input Power	[kW]	15.00	18.0	22.50	30.00
Start-up Voltage	[V]	135	135	135	135
Max. DC Input Voltage*	[V]	1000*	1000*	1000*	1000*
Rated DC Input Voltage	[V]	620	620	620	620
MPPT Voltage Range*	[V]	200-950*	200-950*	200-950*	200-950*
No. of MPP Trackers		2	2	2	2
No. of DC Inputs per MPPT		2/2	2/2	2/2	2/2
Max. Input Current	[A]	30/30	30/30	30/30	30/30
Max. Short-circuit Current	[A]	40/40	40/40	40/40	40/40
Battery Side					
Battery Type		Lithium Battery (with BMS)			
Battery Voltage Range	[V]	135-750			
Maximum Charging/Discharge Current	[A]	40/40			
Grid Side					
Rated Output Power	[kW]	10.00	12.00	15.00	20.00
Max. Output Apparent Power	[kVA]	11.00[1]	13.20	16.50[3]	22.00
Max. Input Apparent Power**	[kVA]	20.00	24.00	30.00	30.00
Max. Charging Power of Battery	[kW]	10.00	12.00	15.00	20.00
Rated AC Voltage	[V]	3L/N/PE; 220/380V;230/400V;240/415V			
Rated AC Frequency	[Hz]	50/60			
Max. Output Current	[A]	16.50[2]	20.00	25.00[4]	33.50
Power Factor		0.8 leading …0.8 lagging			
Max. Total Harmonic Distortion		<3% @Rated output power			
DCI		<0.5%In			
Back-up Side					
Rated Output Power	[kW]	10.00	12.00	15.00	20.00
Max. Output Apparent Power	[kVA]	11.00	13.20	16.50	22.00
Max. Output Current	[A]	16.50	20.00	25.00	33.50
On/Off-grid Switching Time	[ms]	<10ms			
Rated Output Voltage	[V]	3L/N/PE; 220/380V;230/400V;240/415V			
Rated Output Frequency	[Hz]	50/60			
Voltage Harmonic Distortion		<3% @Linear load			
Efficiency					
Max. Efficiency		98.4%	98.4%	98.4%	98.4%
European Efficiency		97.5%	97.5%	97.5%	97.5%
Protection					
Integrated Protection		DC reverse polarity protection / Battery input reverse connection protection / Insulation resistance protection / Surge protection / Over-temperature protection / Residual current protection / Islanding protection / AC over-voltage protection / Overload protection / AC short-circuit protection			
General Data					
Over Voltage Category		PV: II Main: III			
Dimensions	[W×H×D mm]	534×418×210			
Weight	[KG]	28.0 (10-12kW) / 31.0 (15-20kW)			
Protection Degree		IP65			
Standby Self-Consumption	[W]	<15			
Topology		Transformerless			
Operating Temperature Range	[°C]	-30~60			
Relative Humidity	[%]	0~100			
Operating Altitude	[m]	3000 (>3000m Derating)			
Cooling		Smart fan			
Noise Level	[dB]	<40			
Display		OLED & LED			
Communication		CAN, RS485, WiFi/LAN (Optional)			

* PV Max. Input voltage is 950V without battery, or 850V with battery, otherwise inverter will be waiting;
** Max apparent power from the grid means the maximum power imported from the utility grid used to satisfy the backup loads and charge the battery;
1) G98: 10.5kVA; 2) G98: 16.00A; 3) AS 4777.2: 15.0kVA; 4) AS 4777.2: 21.7A

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