

MARSTEK

Power Anywhere & Anytime

MARSTEK MARS I PLUS

7-in-1 Three-Phase Residential ESS

12kW On-grid, 24kW 4 MPPT PV Input
Modular Batteries, 1 Unit 5.12kWh,
Dynamic Expand up to 6 Units, Total 30.72kWh

Support Anti Feed-in, 100% Self Consumption
Maxium Money Saving with AI Optimization
With "MARSTEK CT002" / "Shelly" Smart Meter

Support Heat Pump by SG-Ready / RS485
Support Wi-Fi / BT / Ethernet / RS485

DC EV Charger 40kW, V2G 12kW

HD Touchable Screen
IP65 Waterproof



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RESIDENTIAL ESS | THREE-PHASE

SPECIFICATIONS



Model	MST-MARS I-8KTP		MST-MARS I-10KTP		MST-MARS I-12KTP	
PV Input						
Max. PV Power	16kW		20kW		24kW	
Max. DC Input Voltage	1000V					
Nominal DC Input Voltage	650V					
Start-up Voltage	200V					
MPPT Voltage Range	200V~850V					
Number of MPP Trackers	4					
Number of PV Strings Per MPPT	1					
Max. Input Current Per MPPT	16A					
Max. Short-circuit Current Per MPPT	20.8A					
AC Output and Input (On-grid)						
Nominal Output Power	8kW		10kW		12kW	
Max. Output Apparent Power	8.8kVA		11kVA		13.2kVA	
Nominal Output Current	12.2A		15.2A		18.2A	
Max. Output Current	13.5A		16.5A		20A	
Nominal Output Voltage	380V / 400V					
Nominal Grid Frequency	50Hz / 60Hz					
Power Factor	0.8 leading ~ 0.8 lagging					
Total Current Harmonic Distortion	THDi < 3%					
Nominal Input Power	12kW		15kW		18kW	
Max. Input Apparent Power	12kVA		15kVA		18kVA	
Nominal Input Current	16.3A		20.4A		24.5A	
Max. Input Current	18.2A		22.7A		27.3A	
Efficiency						
Max. Efficiency	98.20%		98.50%		98.20%	
European Efficiency	97.80%		97.80%		97.80%	
MPPT Efficiency	99.50%		99.50%		99.50%	
Battery Conversion Efficiency	97.80%		97.80%		97.80%	
AC Output (Backup)						
Nominal Output Power	8kW		10kW		12kW	
Peak Output Current (1 Second)	17.4A (12kVA)		21.7A (15kVA)		26A (18kVA)	
Nominal Output Voltage	380V / 400V					
Power Factor	50Hz / 60Hz					
Total Voltage Harmonic Distortion	THDv < 3%					
Disruption Time of Backup Switch	<10ms					
Battery Connection						
Battery Module Models	MST-MARS I PLUS-5.0KBAT					
Number of Modules Per Inverter	1~6PCS					
Nominal Voltage of Battery Module	650V					
voltage Range of Battery Module	650V~950V					
Protection						
Safety Protection Feature	Insulation monitoring, Residual current monitoring, Anti-islanding protection, DC reverse polarity protection, AC OV/OC/SC protection, Type II DC/AC surge protection					
General Data						
Dimensions (W/H/D)	610*220*560mm					
Weight	35 kg					
Storage Temperature Range	-35°C~80°C					
Operating Temperature Range	-20°C~60°C					
Relative Humidity Range	0~100%					
Max. Operating Altitude	4000m, derating from 2000m					
Cooling	Natural cooling					
Standby Power Consumption	<25W					
System Ingress Protection Rating	IP65					
Noise Level	<30dB					
Display	7" LCD, App					
Communication	RS485 for Meter, RS485 for Heat Pump, Parallel CAN * 2, DC BUS CAN (For V2G), RS485 for EMS, USBa for EMS Dongle, Wifi/BT/Ethernet, Battery Access CAN (Internal)					
General IO	DI*4, DO*2, CT*3, +5V power, +12V power, DRAM					
Standard Compliance						
Safety Standard	IEC62109-1, IEC62477-1					
EMC Standard	IEC / EN61000-6-1 / -3					
On-grid Standard	EN 50549-10, VDE 4105					