

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 15kW, 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		