

MARSTEK VENUS D

## 4kW 4 MPPT Balcony ESS with 2.2kW AC-Coupling

4 MPPT for 4kW Solar Power, 2.2kW Bidirectional On-Grid Power  
2.2kW Backup Power, Peak at 2.5kW  
EPS Switchover in 15ms

Plug & Play, Seamlessly Integrates with Your Existing Solar System  
Modular Design, Flexible Expansion up to 6 Units & 15.36kWh

Anti Feed-In with Smart Meter of MARSTEK, Shelly, etc  
Support Whole-home Single/Three Phase Backup with MARSTEK SmartBox  
Single-Phase: up to 3 Units Parallel, 6.6kW/46.08kWh  
Three-Phase: Each Phase up to 3 Units Parallel  
Total 9 Units Parallel, 19.8kW/138.24kWh  
AI Optimized TOU Management for Cost Savings

LFP Cells with 6000+ Cycles, 10 Years Warranty  
IP65 Waterproof, Operates within -20°C to 60°C



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SPECIFICATIONS



|                                           |                                                      |
|-------------------------------------------|------------------------------------------------------|
| Model                                     | MARSTEK VENUS-D                                      |
| Energy Storage Unit (Stack)               |                                                      |
| Adaptive Energy Storage Unit              | MST-E2.5ST-D                                         |
| Number of Energy Storage Unit             | 6PCS (Max)                                           |
| Total Capacity of the Product             | 2.56kWh~15.36kWh                                     |
| PV Input                                  |                                                      |
| Maximum Input Power                       | 4kW                                                  |
| MPPT Operating Voltage Range              | 25V~55V                                              |
| Maximum Input Current (Single Channel)    | 32A                                                  |
| MPPT Track Number                         | 4                                                    |
| MPPT Efficiency                           | 99.80%                                               |
| Back-up (Off-grid)                        |                                                      |
| Rated Output Power                        | 2.2kVA                                               |
| Peak Output Power                         | 2.5kVA, 60s                                          |
| Rated Output Voltage                      | 230V                                                 |
| THDu (Linear Load)                        | <3%                                                  |
| AC Input/Output                           |                                                      |
| Rated Output Power                        | 2.2kVA / 0.8kVA & 2.2kVA                             |
| Working Phase                             | L/N/PE                                               |
| Rated Grid Voltage                        | 230V                                                 |
| Rated Grid Frequency                      | 50Hz                                                 |
| Rated Grid Output Current                 | 9.57A / 3.48A & 9.57A                                |
| Power Factor                              | > 0.99(default), 0.8lagging...0.8leading(adjustable) |
| THDi                                      | <3%                                                  |
| Efficiency                                |                                                      |
| Battery Side - AC Side Maximum Efficiency | >94.5%                                               |
| Basic Parameters                          |                                                      |
| Ambient Temperature Range                 | -20°C ~ +60°C (Storage -30°C~ +85°C)                 |
| Relative Humidity                         | 0-95%                                                |
| IP Level                                  | Ip65                                                 |
| Dimensions                                | 480*320*105mm                                        |
| Weight                                    | 17.5kg                                               |
| Cooling Method                            | Natural Cooling                                      |
| Maximum Altitude                          | 2000m                                                |
| General                                   |                                                      |
| Grid connection                           | BC05                                                 |
| Photovoltaic connection                   | MC4                                                  |
| Off-grid port                             | European Socket                                      |
| Display                                   | LED                                                  |
| Communication                             | Bluetooth, WIFI & RS-485, EtherNet                   |



|                           |                                       |
|---------------------------|---------------------------------------|
| Model                     | MST-E2.5ST-D                          |
| Battery Parameter         |                                       |
| Rated Voltage             | 51.2V (16S)                           |
| Battery Energy            | 2.56kWh                               |
| Life Cycle                | >6000(25°C)                           |
| Battery Type              | LiFePO <sub>4</sub>                   |
| Depth of Discharge        | 90%                                   |
| Battery Capacity          | 50Ah                                  |
| Basic Parameters          |                                       |
| Ambient Temperature Range | -20°C ~ +60°C (Storage -30°C ~ +85°C) |
| Relative Humidity         | ≤95%                                  |
| IP Level                  | IP65                                  |
| Dimensions                | 480*320*150mm                         |
| Weight                    | 26kg                                  |
| Cooling Method            | Natural Cooling                       |
| Maximum Altitude          | 2000m                                 |