

## Marstek Venus-E 5.12 kWh

# Marstek Venus-E 5.12 kWh All-in-One Solar Energy Storage System User Manual

MODEL: VENUS-E 5.12 kWh (MST-5.12KWH-VENUS-E)

## 1. Introduction

This user manual provides essential information for the safe and efficient installation, operation, and maintenance of your Marstek Venus-E 5.12 kWh All-in-One Solar Energy Storage System. Please read this manual thoroughly before using the product and keep it for future reference. Adhering to these guidelines will ensure optimal performance and extend the lifespan of your device.

The Marstek Venus-E is designed to store solar energy, optimize energy costs, and provide reliable power for various applications, from balcony power plants to larger household systems.

## 2. Safety Instructions

**WARNING: Failure to follow these safety instructions may result in electric shock, fire, serious injury, or property damage.**

- Always disconnect the system from all power sources before performing any installation, maintenance, or troubleshooting.
- Only qualified personnel should install and service this equipment.
- Do not expose the unit to excessive moisture, rain, or direct water spray. The unit has an IP65 rating, but proper installation is crucial.
- Ensure proper ventilation around the unit to prevent overheating.
- Do not disassemble, repair, or modify the unit yourself. Contact authorized service personnel.
- Keep flammable materials away from the unit.
- Ensure all electrical connections are secure and comply with local electrical codes.
- Do not insert foreign objects into any openings of the unit.

## 3. Product Overview

The Marstek Venus-E is a compact and powerful all-in-one solar energy storage solution. It features a robust design suitable for various environments and offers intelligent energy management capabilities.

### 3.1 Key Features

- **Capacity:** Base storage capacity of 5.12 kWh, expandable up to 20.48 kWh.

- **Durability:** IP65 protection class, ensuring reliable performance in demanding environmental conditions.
- **Operating Temperature:** Wide operating temperature range from -20°C to +55°C.
- **Efficiency:** Optimizes energy costs by charging during off-peak hours and utilizing stored energy during peak times.
- **Monitoring:** Real-time monitoring and control via the Marstek App, allowing for energy trading and excess energy negotiation.
- **Battery Life:** Features an ESS-class LFP storage battery with over 6000 charge cycles and an estimated lifespan of 15 years.
- **Intelligent Management:** Equipped with an Intelligent Battery Management System (BMS) for enhanced safety and performance.
- **Installation:** Designed for quick 5-second plug & play installation.
- **Backup Power:** Provides 2.5 kW backup power capacity for uninterrupted supply.

### 3.2 Product Components and Indicators

The main unit includes various ports and indicators for status monitoring and connectivity.



Figure 3.1: Front view of the Marstek Venus-E unit, highlighting the 5120Wh capacity and status indicators (MAIN, SRO, BACKUP,

# 5kW Hochleistungs Plug and Play Speicher

Mehr Einsparungen mit einem **dynamischen Stromtarif**



**AC-gekoppeltes  
Energiespeichersystem**



**Inselbetrieb für  
netzunabhängige Nutzung**



**IP65**



Figure 3.2: Illustration of the 5kW high-performance plug-and-play storage system, showing AC-coupled energy storage and island operation for grid-independent use. Also highlights IP65 rating and 10-year warranty.



Figure 3.3: Detailed view of the reliable and durable battery, intelligent BMS (Battery Management System), and IP65 waterproof design. Shows internal battery cells and cooling system.

## 4. Setup and Installation

The Marstek Venus-E is designed for quick and easy installation. Follow these steps for a successful setup.

### 4.1 Unpacking and Initial Inspection

- Carefully unpack the unit and all accessories from the packaging.
- Inspect the unit for any visible damage. If damage is found, do not proceed with installation and contact customer support.
- Ensure all components listed in the packing list are present.

### 4.2 Placement

Choose a suitable location for the Venus-E unit. Consider the following:

- **Ventilation:** Ensure adequate airflow around the unit.
- **Environment:** While IP65 rated, avoid direct exposure to extreme weather conditions if possible. The unit can be placed in various locations such as a garden, balcony, garage, or living room.
- **Stability:** Place the unit on a flat, stable surface. Attach the provided wheels for easy mobility if desired.

# Einfache Steuerung mit der Marstek-App

## Dual Bluetooth und WIFI-Module für Echtzeitdaten und Fernsteuerung



Stromhandel Modus



Selbstanpassung Modus



Manueller Modus



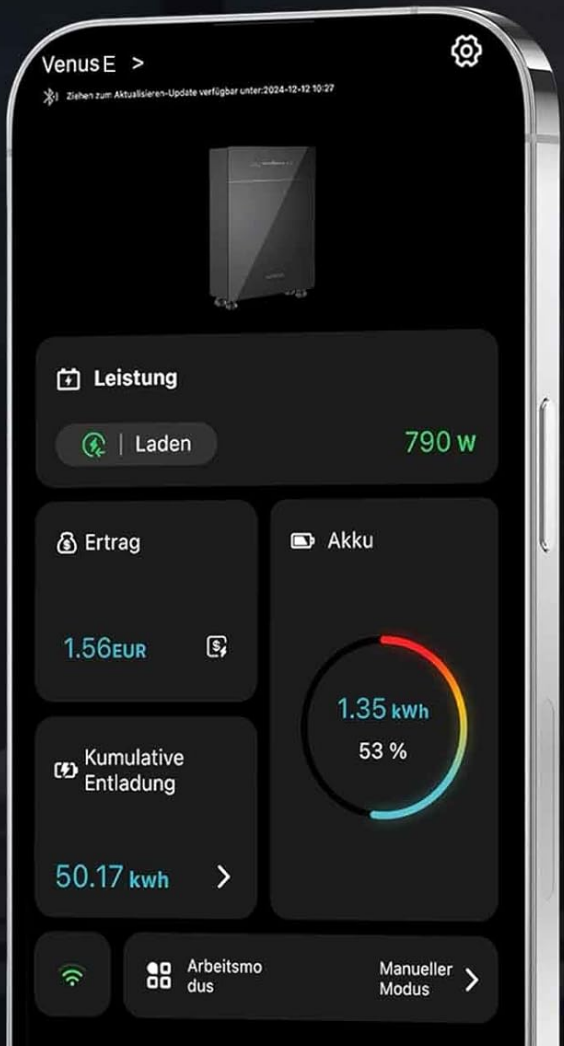


Figure 4.1: Examples of flexible energy supply locations for the Marstek Venus-E, including garden, balcony, garage, and living room setups.

### 4.3 Electrical Connection (Plug & Play)

The Venus-E is designed for simple plug & play installation, often taking as little as 5 seconds for initial setup.

1. Connect the AC input cable from your solar inverter or grid connection to the designated AC input port on the Venus-E.
2. Connect the AC output cable from the Venus-E to your household electrical system or designated loads.
3. Ensure all connections are secure before proceeding.



Figure 4.2: Illustration demonstrating the 5-second plug & play installation process and the backup power connection with 2.5 kW capacity.

#### 4.4 Marstek App Setup

For real-time monitoring and advanced control, download and set up the Marstek App.

1. Download the "Marstek" app from your smartphone's app store (iOS or Android).
2. Open the app and follow the on-screen instructions to create an account or log in.
3. Use the app's pairing function (via Dual Bluetooth and WiFi modules) to connect to your Venus-E unit.
4. Once connected, you can monitor energy flow, battery status, and configure operating modes.

## Flexible Energieversorgung für jedes Zuhause – Strom, wo Sie ihn benötigen



Figure 4.3: Screenshot of the Marstek App interface, showing options for energy trading mode, self-adjustment mode, and manual mode, along with real-time data display.

## 5. Operation

The Marstek Venus-E offers flexible operation modes to optimize your energy usage.

### 5.1 Operating Modes via Marstek App

The Marstek App provides comprehensive control over your energy storage system:

- **Energy Trading Mode:** Allows for automated charging and discharging based on electricity tariffs, optimizing cost savings.
- **Self-Adjustment Mode:** The system intelligently adapts to your energy consumption patterns.
- **Manual Mode:** Provides direct control over charging and discharging parameters.

The app also displays real-time data such as power input/output, battery charge level, and cumulative energy discharged.

# Dynamische Stromtarife – So sparen Sie clever

Laden, wenn Strom günstig ist. Nutzen, wenn er teuer ist.



- Günstig laden, clever sparen
- Laden Sie Ihre Venus-E Batterie nachts, wenn die Strompreise niedrig sind



- Tagsüber Strom nutzen – ganz ohne Stress
- Versorgen Sie Ihr Zuhause tagsüber, wenn die Strompreise steigen

Figure 5.1: Diagram illustrating how the Venus-E optimizes energy costs by charging when electricity is cheap (e.g., at night) and discharging when it's expensive (e.g., during the day).

## 5.2 Backup Power Function

In the event of a grid outage, the Venus-E can provide backup power to connected loads. Ensure critical appliances are connected to the designated backup output. The system offers 2.5 kW backup capacity.

## 6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your Marstek Venus-E system.

- **Regular Charging:** To maintain optimal performance and battery lifespan, charge the battery at least every three months, even if it is not currently in use.
- **Cleaning:** Periodically clean the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure vents are clear of dust and debris.
- **Inspection:** Regularly inspect cables and connections for any signs of wear or damage.

- **Software Updates:** Keep the Marstek App updated to the latest version to benefit from new features and performance improvements.

## 7. Troubleshooting

This section addresses common issues you might encounter with your Marstek Venus-E system. For problems not listed here, please contact customer support.

| Problem                           | Possible Cause                                                             | Solution                                                                                                                         |
|-----------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Unit not powering on.             | No power input; main switch off; faulty cable.                             | Check AC input connection; ensure main power switch is ON; inspect cables for damage.                                            |
| Red warning light illuminated.    | Internal fault; short circuit; overcurrent.                                | Disconnect from power, wait 5 minutes, then reconnect. If the light persists, contact support. Do not attempt to open the unit.  |
| Marstek App not connecting.       | Bluetooth/WiFi off; unit not in pairing mode; app outdated.                | Ensure Bluetooth/WiFi is enabled on your device and the Venus-E. Restart the app and unit. Update the app to the latest version. |
| Battery not charging/discharging. | Incorrect operating mode; solar input insufficient; grid connection issue. | Check operating mode in the app. Verify solar panel connection and output. Ensure grid connection is stable.                     |

## 8. Specifications

Technical specifications for the Marstek Venus-E 5.12 kWh system.

| Category                    | Parameter                | Value               |
|-----------------------------|--------------------------|---------------------|
| Model & Battery Information | Model                    | VENUS-E             |
|                             | Rated Voltage            | 51.2V (16S)         |
|                             | Capacity                 | 5120Wh              |
|                             | Cycle Life (Cycles)      | >6000 (25°C)        |
|                             | Battery Type             | LiFePO <sub>4</sub> |
|                             | DOD (Depth of Discharge) | 90%                 |
| AC Input/Output (On-Grid)   | Rated Input Power        | 2.5kVA / 800VA      |
|                             | Rated Output Power       | 2.5kVA / 800VA      |
|                             | Operating Phase          | 1 / H / PE          |
|                             | Rated Voltage            | 230V                |
|                             | Grid Voltage Range       | 187V - 253V         |

| Category                  | Parameter                         | Value                                                                                                              |
|---------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------|
|                           | Rated Grid Frequency              | 50Hz                                                                                                               |
|                           | Rated Grid Output Current         | 10.9A                                                                                                              |
|                           | Power Factor                      | >0.99 (Standard) / 0.8 leading - 0.8 lagging (adjustable)                                                          |
| Backup (Off-Grid)         | Rated Output Power                | 2.5kVA                                                                                                             |
|                           | Max. Apparent Output Power        | 3.5kVA                                                                                                             |
|                           | Rated Voltage                     | 230V                                                                                                               |
|                           | Rated Output Current              | 10.9A                                                                                                              |
|                           | Rated Output Voltage Frequency    | 50Hz                                                                                                               |
| Efficiency & Protection   | Max. AC Side Efficiency           | >93.5%                                                                                                             |
|                           | Protection Level                  | I                                                                                                                  |
| General & Environmental   | Operating Temperature Range       | -20°C ~ +55°C (Storage: -30°C ~ +85°C)                                                                             |
|                           | Relative Humidity                 | 0 - 95%                                                                                                            |
|                           | Protection Type                   | IP65                                                                                                               |
|                           | Cooling                           | Natural Convection                                                                                                 |
|                           | Max. Operating Altitude           | 2000m                                                                                                              |
|                           | Grid Connection Standard          | NFEN50549-1, VDE4105/0124,G98,CEI0-21,PETREL,PN-EN50549-1/-2,TORRES,UNI217001/217002,NT5631, AS47772               |
|                           | Regulation/EMC                    | IEC62040,IEC62477,IEC/EN 61000-6-1/-2/-3/-4,IEC/EN 61000-3-2/-3,EN 300 328,EN 301 489 -1 / -17, EN 50665, CB 62619 |
| Dimensions & Connectivity | Dimensions                        | 560 x 201 x 890 mm                                                                                                 |
|                           | Weight                            | 60 ± 0.5 kg                                                                                                        |
|                           | Grid-Tied AC Connection           | Three-pole household plug (Euro 16A)                                                                               |
|                           | Supported Communication Interface | WiFi & Bluetooth & RS485 (Waterproof Aviation Plug)                                                                |

Figure 8.1: Detailed technical specifications of the Marstek Venus-E.

## 9. Warranty and Support

Marstek is committed to providing high-quality products and excellent customer service.

- **Warranty:** The Marstek Venus-E comes with a 10-year warranty, ensuring peace of mind regarding your investment. The battery itself has an estimated lifespan of 15 years.
- **Online Manual:** For the latest version of the product manual and additional resources, please visit the official product page: [Marstek Venus-E Online Manual](#)

## 9.1 Contact Information

For technical support, warranty claims, or any inquiries, please contact Marstek Energy Co., Limited:

**Address:** BLDG#A, Changfang Industrial Park, No.2 Guihua 5th Road, Pingshan District, Shenzhen, Guangdong, China

**Tel:** 86-755-28398778

**Email:** [market@marstekenergy.com](mailto:market@marstekenergy.com)

**Web:** [www.marstekenergy.com](http://www.marstekenergy.com)

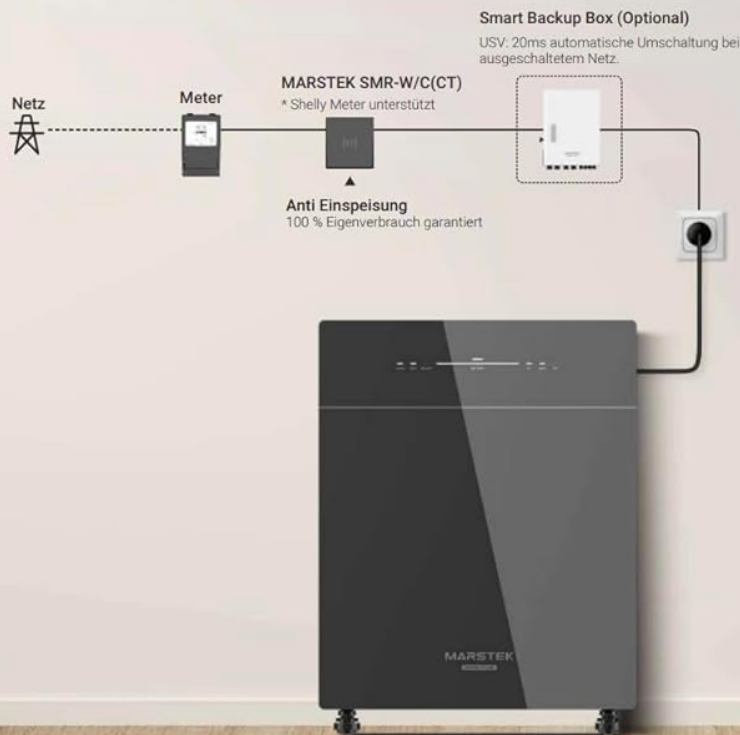
# MARSTEK

Power Anywhere & Anytime

## ENERGYBOX VENUS-E

# AC Stromspeicher

- 5,12kWh Kapazität
- 800W/2500W On-grid, Plug & Play
- 2500W Backup bei Stromausfällen
- Kompatibel mit jedem bestehenden PV-System
- Einfachstes Mikrokraftwerk
- Geld sparen und verdienen



### Marstek Energy Co., Limited

Add: BLDG#A, Changfang Industrial Park, No.2 Guihua 5th Road, Pingshan District, Shenzhen, Guangdong, China

Tel: 86-755-28398778

Email: [market@marstekenergy.com](mailto:market@marstekenergy.com)

Web: [www.marstekenergy.com](http://www.marstekenergy.com)



Product Manual

Figure 9.1: Marstek Energy Co., Limited contact details and a QR code for the product manual.

## Documents - Marstek – Venus-E 5.12 kWh



### [\[pdf\]](#) Datasheet

Venus E 5 12 kWh 2 0 Thuisbatterij zonder P1 meter MST BIE5 6 days ago · oplossing met slimme energiesturing automatische noodstroomvoorziening en volledige ondersteuning voor datasheet

401333216 filename\* UTF 8 asset eezybridge 2a2828a1 ca59 4120 bd07 6cb709a85bb5 |||

Venus E 5.12 kWh 2.0 Thuisbatterij zonder P1 meter MST-BIE5-2500 MST-BIE5-2500 Specificaties Artikelnummer Fabrikantnummer EAN code Merk Productgroep Serie/Programma Technische details Geschikt voor noodstroom 401333216 MST-BIE5-2500 6951525704093 Marstek Batterij voor zonne-energie Refer...

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